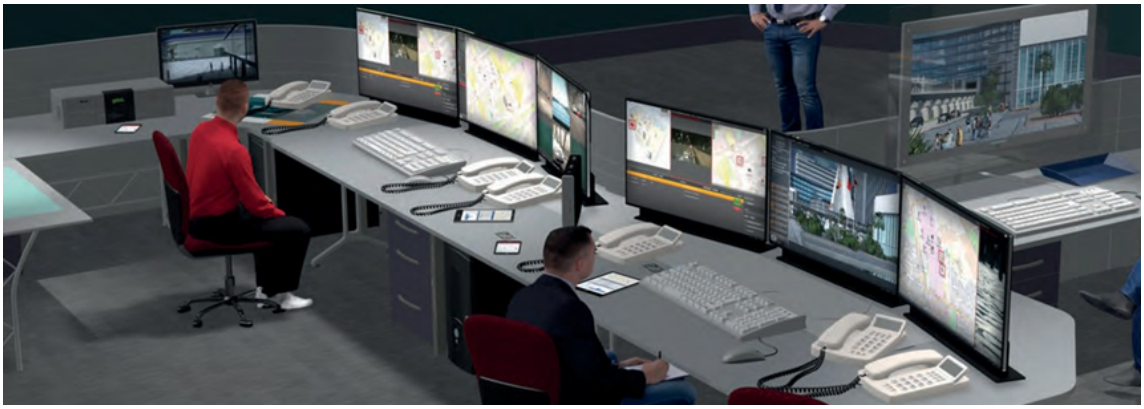
# ARFG Management System ($C^2$)



**Overview**

In today's increasingly interconnected world, system platforms involving multiple geographical sites, many sources of information and various areas of responsibility are more and more common.

Therefore, seamless integrations are needed for efficient operations such as crisis management, fight against crime or standard daily tasks. The success of integrated platforms relies on the ability to anticipate and respond to events affecting multiple locations and areas of responsibility.

At the same time a system platform should preserve the individual vision and responsibilities of the different stakeholders, keep control of information ownership and select and present only relevant information to the right operator.

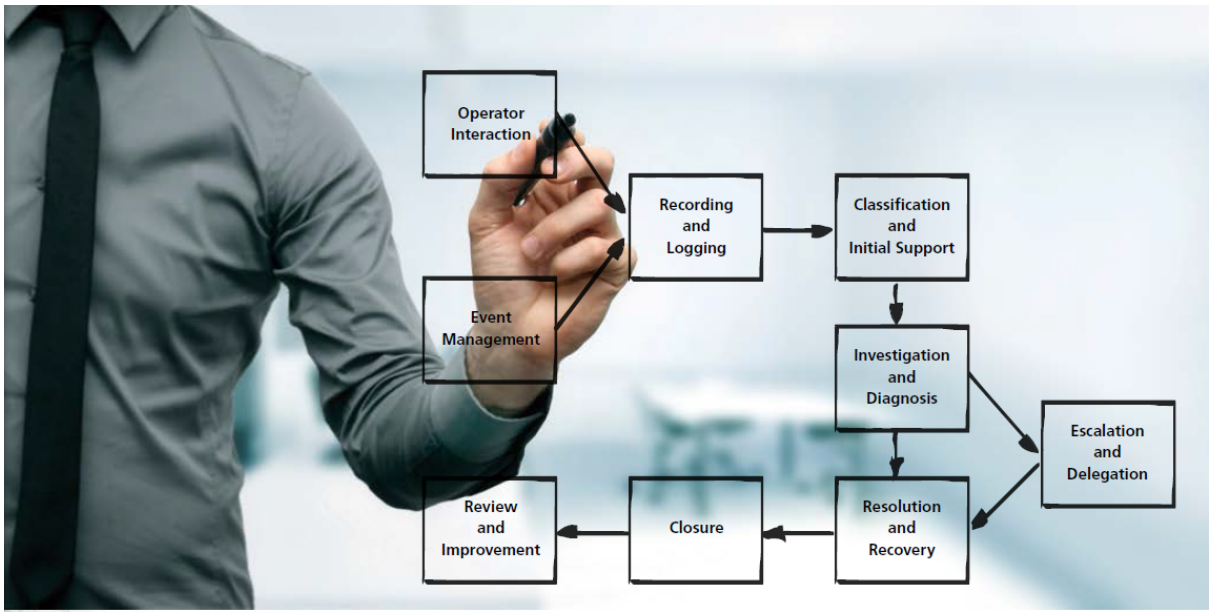
CRISP is an advanced geospatial command and control system that offers superior situational awareness by integrating multiple security and safety applications into a unified platform. It provides Physical Security Information Management (PSIM) and Intelligence, Surveillance, Target Acquisition, and Reconnaissance (ISTAR) solution that's includes:

- **Security:** CCTV, PTZ Control, Intrusion Detection, Access Control System, Radar, Facial Recognition, ANPR, UAV/UAS and "On the move" platforms.
- **Safety:** Fire Detection, Public Address, Perimeter, Gate, Security Bollard, Building Management
- **Communication:** Radio, Smart phone, Mobile client, SMS, Email, Satellite phone
- **Tracking & GIS:** GPS Tracker, ADS-B, AIS, MAP Layer, GIS Database (Address, etc.)

An integrated solution enables numerous organizational benefits, including increased control, improved situational awareness and management reporting. Ultimately, these solutions allow organizations to reduce costs through improved efficiency and to improve security through increased intelligence.

With ARFG C2 system you can reduce the risk of human error, improve security response, protect existing security investments and reduce operating costs by converging all your security cameras, sensors, subsystems, data sources and operating procedures into a single unified and structured platform.

The system is a software platform designed to integrate multiple unconnected security and safety applications and devices and control them through one comprehensive user interface.




The requirement for organizations to provide continuously improving, cost-effective security solutions need a new geospatial approach to manage large amount of information and present it to security control rooms in geographical context. The advanced geospatial analysis of the system evaluates every single incident and assists through guided workflows offering a unique situational awareness for operators.

The system provides tools that significantly accelerate response, improve efficiency and reduce operating costs in every phase of the situational management lifecycle.

**Proven Deployment**

- **UN Camps:** The integrated solution is currently deployed in over 50 UN camps in Africa, demonstrating its reliability and effectiveness in diverse and challenging environments.
- **Global Reach:** Successfully implemented in Israel and Germany, showcasing its adaptability to different government, regulatory and operational entities

**Advantages**

- **"Combat-Proven" Reliability:** The integrated system has been field-tested and proven in high-stakes environments, ensuring robust performance under pressure.
- **Versatile Integration:** Compatible with a wide range of GFE, ensuring that the system can be tailored to meet specific governmental and organizational needs.
- **Comprehensive Support:** ARFG provides end-to-end services, including installation, configuration, and maintenance, ensuring that the system operates smoothly and efficiently.

**Key Features**

- **Comprehensive Protection:** The system ensures the safety of people, property, and critical infrastructure by providing a holistic security solution.
- **Improved Response Times:** The system enhances situation response times through real-time incident detection and management.
- **Integration Capabilities:** The system seamlessly integrates various subsystems, including CCTV, intrusion detection, access control, radar, and more.
- **Geo-Referencing:** All elements are geo-referenced to offer superior situational awareness, allowing operators to view incidents in a geographical context.
- **Cost Efficiency:** By converging all security cameras, sensors, and subsystems into one platform, the system reduces operating costs and improves efficiency.
- **Scalability:** The system can scale from a single computer setup to a complex, globally distributed solution, ensuring adaptability to any organizational size and requirement

**Operational Modules and interfaces**

The system consists of two main layers - internal modules and interfaces to different subsystems (third party):

## Interfaces:

1. Video management system:

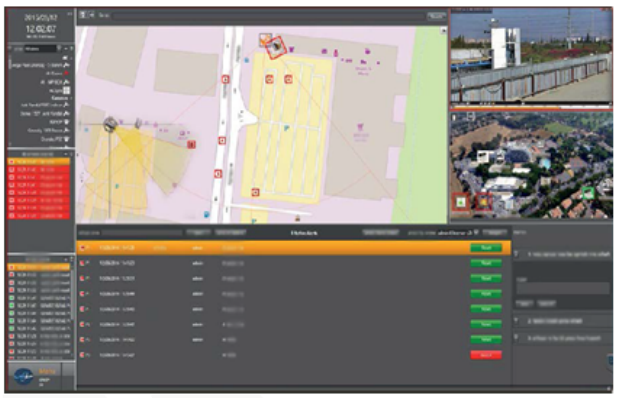
   - **High Availability:** Ensures continuous operation with features like failover and high availability mode.
   - **Flexibility:** Supports IP, HD-SDI, and analog cameras, and integrates with various third-party security sensors.
   - **Scalability:** Easily scalable by adding more cameras, workstations, and recorders during operations.
   - **User-Friendly:** Offers intuitive operations and easy administration, with support for multiple platforms including desktops, smartphones, and tablets.
   - **Advanced PTZ Management:** Includes dynamic PTZ management for precise camera control and tracking.
   - **Robust Security:** Provides encrypted communications, video, and audio recordings, ensuring high security standards.

2. 38 different camera manufacturers:
   Support all common video protocols in the VMS industry.
3. Access controls systems and intercom systems: Full integration with leading access control system.
4. Perimeter security intrusion fencing systems: Full integration with leading access control system.
5. Intrusion detection and alarms systems: Full integration with leading access control system.
6. Radars systems: Full integration with leading radar manufacturer such as: Crisp, Rada, Magos and more.
7. I/O and multimedia controllers and external devices: Full integration to Adam 6090 dry controllers and similar dry contact external devices.
8. Video wall matrix systems

## Internal modules:

• Alarm module

- System alarms are configured with rules. The rule engine allows various alarm sources, e.g. cameras, IO ports, external sites (in distributed environments), or video analytics, and many more. The rule engine al- lows definition of alarm conditions, e.g. schedules, IO states or intervals.
- Each rule can define sophisticated system behavior and actions. Possible alarm actions include: opening of a view, switching of an IO port, starting/stopping of manual recording, PTZ steering, sending of SMTP alerts, playing of sounds, and many more
- Rules can be combined
- A Managed Alarm is an active alarm by its own workflow. It can be as- signed to other operators, defined with instruction steps that need to be acknowledged, and resolved with only defined resolution grounds (e.g. resolved, false alarm, rehearsal, escalation etc.)
- A rule can associate any number of cameras to an alarm. The cameras can pop up automatically (if configured so) upon the alarm. For example, it is configurable to open the cameras at the front and back entrance and the side walls automatically whenever the intrusion system reports an alarm. Alarm views can be con- figured as auto split (automatically showing 1, or 2x2, or 3x3 live pictures from the alarm cameras) or carousel (tour of the alarm cameras).



• LPR Module

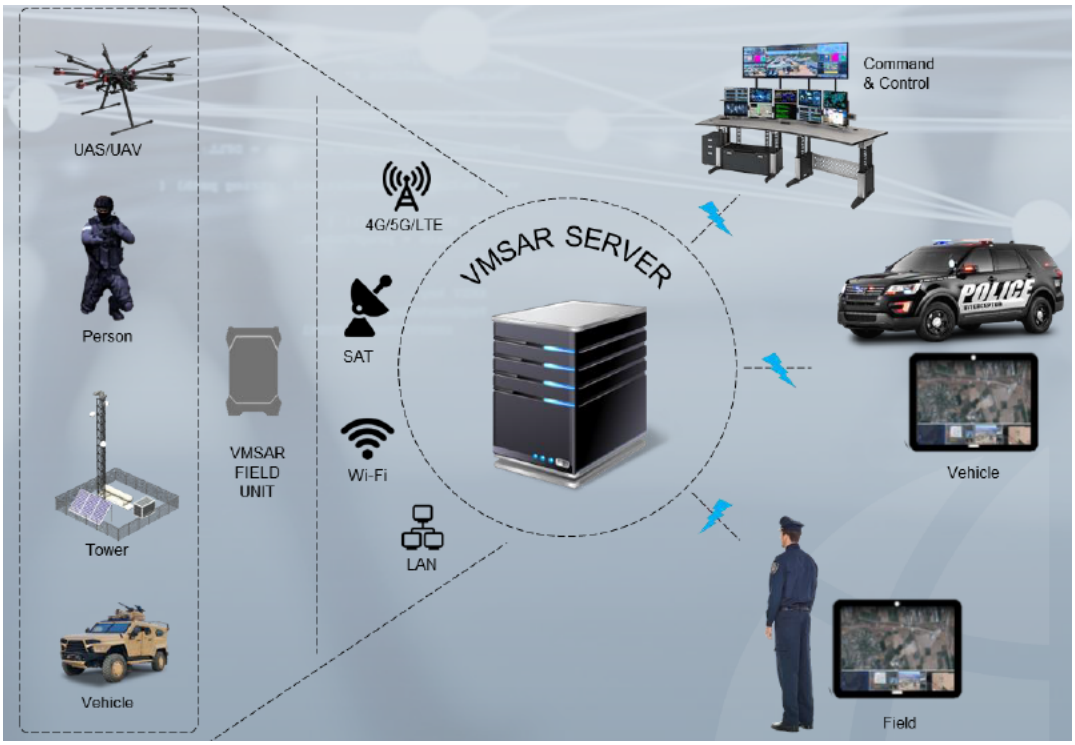
- Market leading license plate recognition algorithm.
- Intuitive management of license plates.
- Intelligent entry / exit control with automatic/manual operations of gates, using automatic plate recognition.
- Monitoring of vehicles onsite at all time.
- Sophisticated reporting engine that allows various reports.
- Monitoring of gates/barriers on a site plan / map.
- Each license plate record has information specified: plate number, full name, contact address, color, make, type.
- User can insert/manage license plate records.
- When a car approaches the gate for entry/exit, LPR recognizes the plate number, and PSIM displays the live view of the car and the LP, compares the recognized plate number with the ones stored in the database and shows either all data (if found in database), or no data (if not authorized). Records are shown in specified colors.
- Gate status is always shown in map.
- At all time, a monitoring screen shows the vehicles that have entered and not left the site.
- Upon closing of visitor hours, if a visitor car is still onsite, trigger alarm.
- Alarms can be escalated if operator senses danger.
- Sophisticated reporting engine with 2 pre-defined reports as part of package.

• Face recognition module

- The programs work in all methods: 1 to 1, 1 to many, many to many.
- Low resolution detection capability from a long distance
- Providing identification options over targeting identification percentages
- Identification and filtering from a blacklist
- Ability to identify on a number of objects.
- Ability to detect in changing lighting conditions

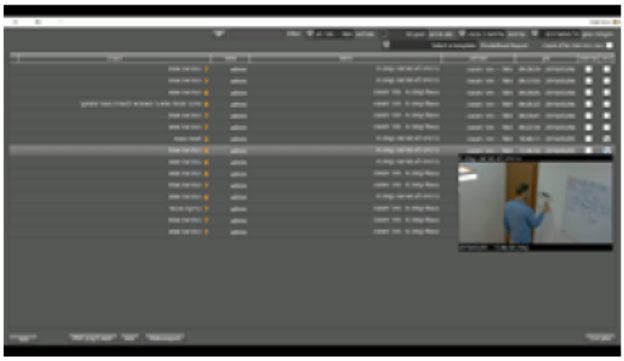
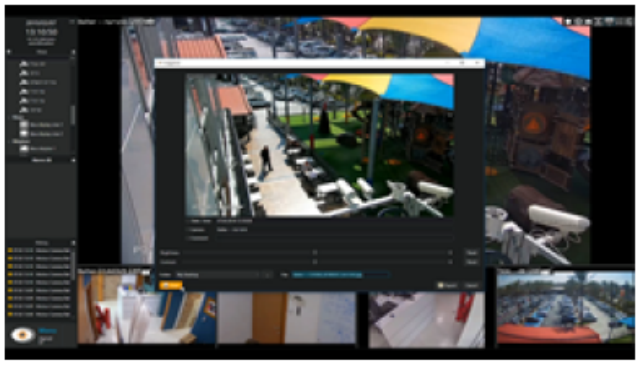

• VIMSAR- real time video streaming

- Real-time video from a variety of sources and from any place.
- The module offers a seamless integration solution of video inputs from diverse sources, including but not limited to drones (UAS and UAV), wearable body cameras, and vehicle-mounted cameras.
- This module is designed to utilize any commercial camera technology to deliver an unparalleled situational awareness experience. By enabling real-time video feed acquisition,
- Streaming Live video / near live video in low band starting from 200Kbs
- Precise understanding of ongoing events for informed actions.

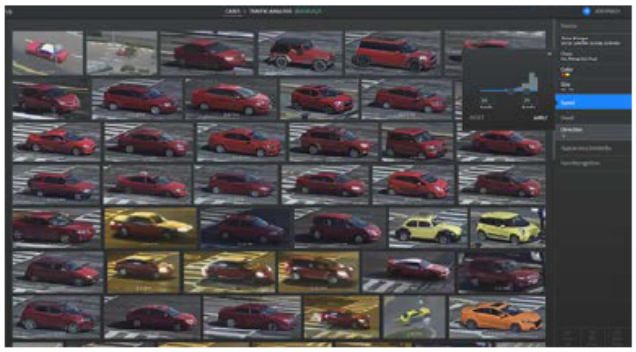



- Ground AI Analytics module
  - ❖ Real-time - Real-time analytics allow for rapid response to pre-defined events, ongoing of alarms and actions, either to protect critical infrastructures, site premises, perimeters, borders, highways, violence, mass events.
  - ❖ Review - Quickly review hours of video in minutes or even seconds. With the CRISP platform, you can use your existing VMS & video sources, import 3rdparty video and export reviewed material all through a single interface
  - ❖ Case Management - Organize all video assets of an investigation in a single container, bookmark objects of interest, and summarize case findings (including all relevant exhibits) in an exportable report.
  - ❖ Multi-Camera appearance search - Rapidly pinpoint people and vehicles of interest, using an extensive range of appearance and movement filters, across multiple video sources.
  - ❖ Trend Analysis - Compare visitor, pedestrian, and traffic patterns of any desired frame, i.e. days, months, years, to spot trends, outliers and insights.
  - ❖ Tracking - Identify & track objects of interest across multiple cameras, near-real-time or in review. Find similar objects in all video streams, including location and timestamp of located object of interest.
  - ❖ Behavior Analysis - Utilizing advanced Deep-Learning analytics, human behavior and vehicle behavior are analyzed. Set thresholds of alarm for

recognized behavior such as violence, panic, disorder, queues, vehicle behavior, traffic jams and much more

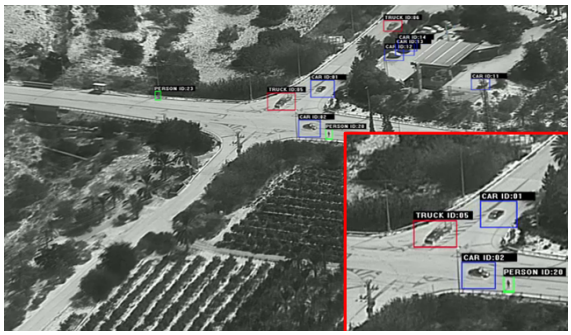







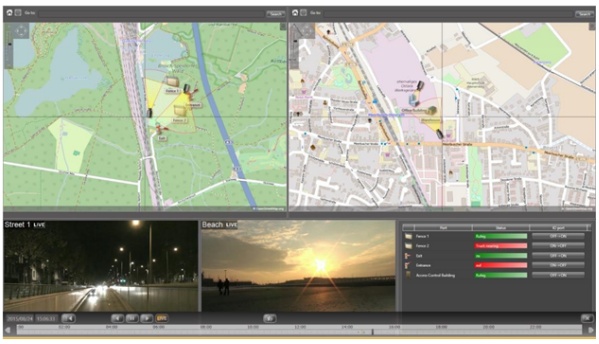
• Arial AI Analytics module (Subject to IMOD export licenses)

- Arial AI capability that analyzes UAVs and Drones video feeds with special Detection capabilities, tracking capabilities, target recognition, target inspection and its unique ID.
- Integration to GIS module in order to supply a full situation awareness status.
- Triggering alerts by using polygons on GIS maps based on meta data that will be supplied by the UAV/DROME).




- GIS module

- The system supports cascading site plans and a flexible definition of status summaries. For example, floor plans within a building can be linked with each other and the building itself. The linking does not only allow quick navigation but the summary of camera and alarm information for the complete building
- Cameras, views, and IO ports can be placed in site plans and the GIS map. The status of all map/site plan items is shown dynamically. Double mouse clicks or drag and drop allow quick access to the cameras
- Individual icons can be imported and defined for all site plan/map items. Icons can be chosen to illustrate each state of an IO port
- The GIS map allows precise location of sensors and alarms. For an alarm, all cameras in the radius can be opened with one simple mouse click
- All external devices can be controlled from the site plan/GIS map through IO ports
- In distributed installations (multi location mode), site plans of each ex- ternal site can be embedded into the GIS map of the headquarter, giving overview on the status (and location) of all external sites at one glance

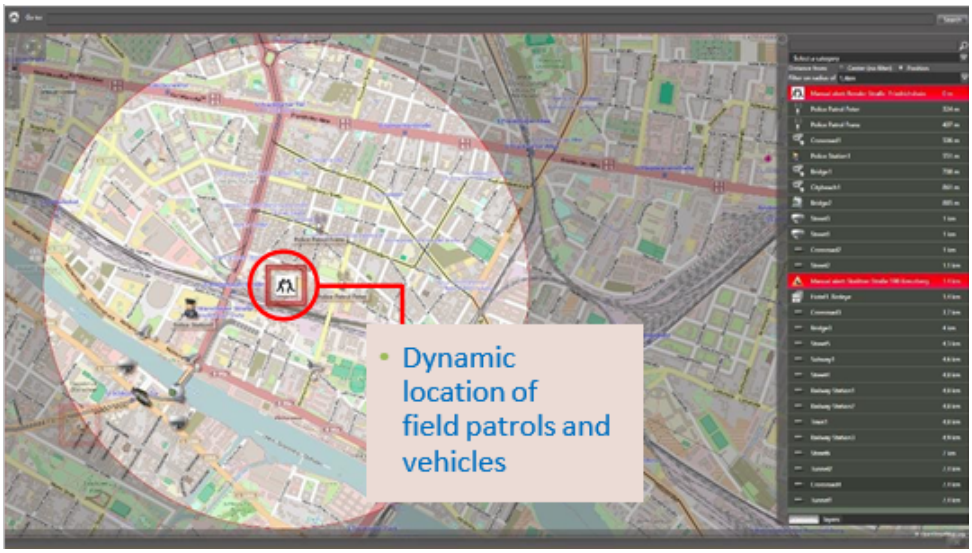


- Forensic module

  - The platform to support mass video investigation for security agencies. Video files with open and proprietary formats and codecs can be read in, organized, evaluated and reduced to the relevant video sequences using various mechanisms.
  - Via Auto Import you automatically integrate new video files into the system. Organize the mass data according to different aspects. Play videos in dynamic multiple views. Use analysis such as face recognition, object recognition, license plate recognition (ANPR), logo and pattern recognition for organization and filtering. The platform contains a unique framework that supports the flexible integration of all analysis methods.
  - Use dynamic tagging to quickly organize and overview. Combined searches help with daily questions like „When? Where? How often? Export the video sequences for meaningful final reports.
  - Seamless protocols and a unique storage concept allow absolute proof security and traceability in compliance with data protection laws

- Mobile Patrol and personal app module

  - Panic Button
  - GIS map + data layers
  - Tracking and routing
  - Secure communications – audio, text and video
  - Alerts management
  - Geofencing and Polygons alerts detections

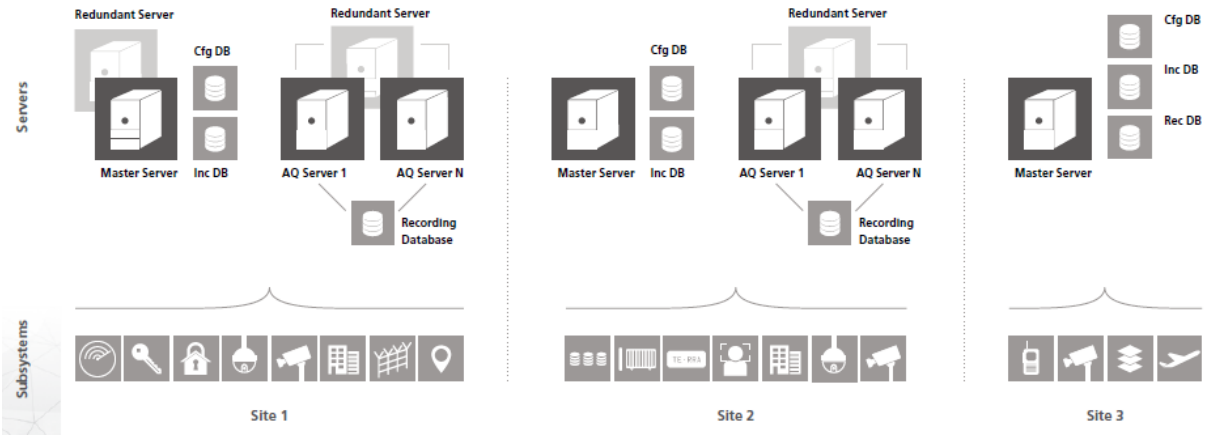



- Video-Wall module

  - Opening video walls by simple drag and drop, including any multiple view
  - Full support of market leading video walls: NVU, Aten, Mitsubishi, and any other through native integration and/or open video standards

• Hot backup Failover module

- Full redundancy for all platform capabilities and modules including:
  - Management of storage sets
  - Backup of configurations
  - Backup of recordings
  - Permanent backups




• Multisite Module

- The system can be operated in multi-location monitoring mode. In such environments, a headquarter accesses various distributed sites, and/or exported recordings of other sites.
- Cameras, site plans, views and IO ports of the site are accessible from the navigation tree in the headquarter
- Each site can decide on the type of alarms that is propagated to the headquarter
- In the headquarter, own workflows can be defined based on alarms from individual external sites
- The headquarter can record live video streams from the site based on certain conditions. For example, it can be defined that the headquarter records dedicated cameras in case the emergency button is pushed on a site, allowing the headquarter to have backup videos even if the recordings should be destroyed on the site
- All sites can supply regular system status information to the headquarter
- Sites can use the perma-nent replication feature to replicate their recordings to a directory in the headquarter, through WAN or LTE. In order to save the

network to the sites, the headquarter can use the replicated records for archive rese- arch and access the network only for live viewings.