Fire & Smoke Detection

Datasheet v4.3

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Contents

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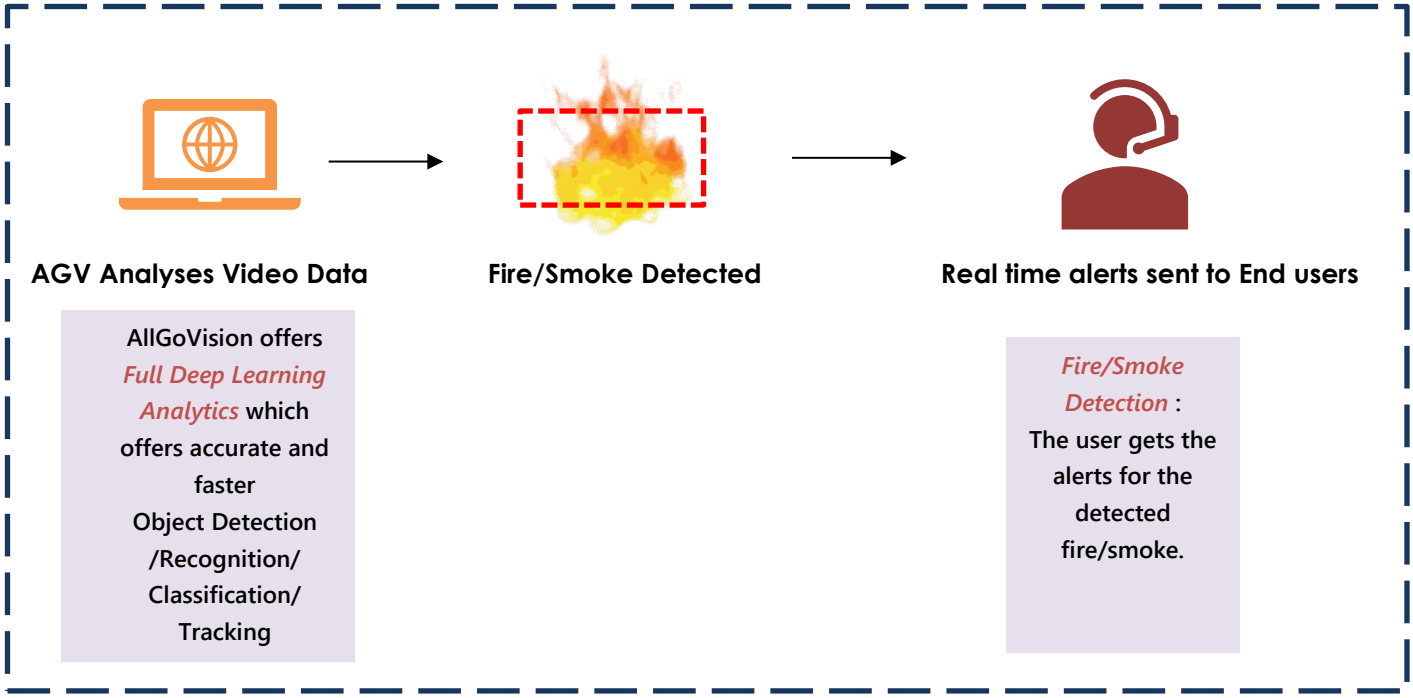
INTRODUCTION

Fire and Smoke Detection – The Smoke and Fire Detection feature accurately detects flames and smoke in the camera field view in a virtually monitored region of interest. Alarms are triggered when flames or smoke are detected in the virtual region for the minimum predefined time as set by the user. This feature can accurately detect the presence of flames, reflected fire light, smoke clouds, and ambient smoke, alerting users in real-time or periodically. It also enables users to monitor live video streams and maintains an event log for multiple alarms. The Fire and Smoke detection feature enhances the protection of all sites and owing to the faster reaction time it also prevents possibilities of accidents. Common applications are in factories, warehouses, offices, and other public and private institutions that require consistent, round-the-clock monitoring.

Deep Learning: A subset of Artificial Intelligence, Deep Learning technology exposes machines to high volumes of tagged data. The machine is then tasked to 'learn', 'analyse', and 'detect' the same information in new datasets which ensures more proficient detection and identification of objects. Since Deep Learning technology is also powered by robust hardware infrastructure, the analytic output is better and faster.

Use of Deep Learning in Fire and Smoke Detection: The use of Deep Learning for Fire and Smoke Detection brings it closer to human perception. Advanced Deep Learning methods can assess large datasets of rising flames and smoke and the layered filters can take the minutest details into account. This increases the degree of accuracy in generating alerts against Fire and Smoke. Thanks to the technology's improved processing performance and superior object classification capabilities, it can efficiently detect and identify multiple object types with low visual biasing and false alarms.



AllGoVision Fire/Smoke Detection Flow

SYSTEM REQUIREMENTS

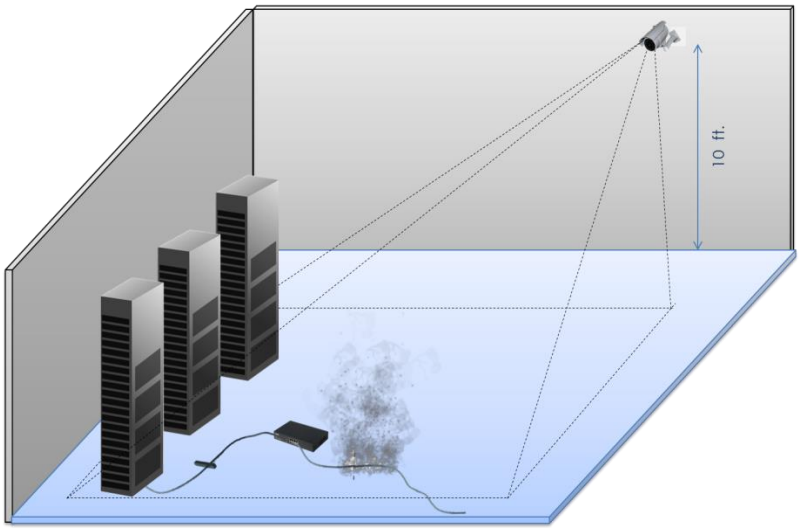
AllGoVision analytics has the following system hardware and software requirements.

CATEGORY	REQUIREMENT
Operating System	Ubuntu server 18.4, Windows Server 2016, Windows Server 2019
Network	Ethernet, 1GB or higher recommended
Hardware Requirements	x86_64 Platform, AVX 2 Support 6th Gen and above + Nvidia GPU
Frame Rate	Frame Rate > 10 fps
Database	Maria DB (X64) 10.3.13.0
Stand Alone version camera support	Camera Models from Axis, Pelco, Bosch, Hikvision, Honeywell, IQinvision, Sony, Dahua, Panasonic, Brickcom, Indigovision, Cisco, Samsung, Acti, Digital Watchdog, and others (ONVIF Cameras).
VMS Support	Honeywell DVM, Honeywell Maxpro, Milestone, Genetec, IndigoVision, ExacqVision, Cognyte (Verint), Bosch, Network Optix Note: With VMS all cameras supported by VMS will be supported
Reporting & Analysis Software	AllGoVision Alarm Center

INSTALLATION

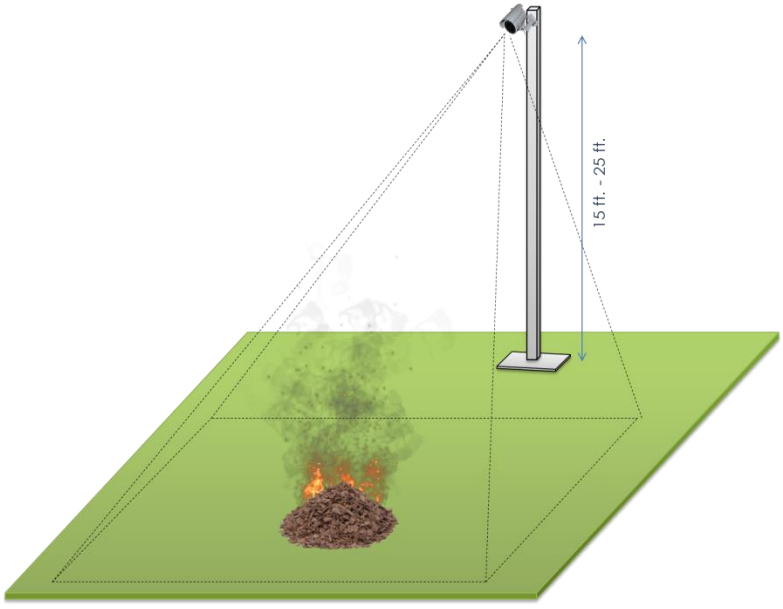
Cameras should be installed at a height of about 10 feet focusing towards the region of interested as illustrated:

Camera Setup for Smoke & Fire Detection (Indoor)



Angular Camera
Height of Installation (Indoor) = approx. 10 feet
Focusing on the monitoring zone
No occlusion scenario
Works with fixed cameras

Camera Setup for Smoke & Fire Detection (Outdoor)



Angular Camera
Height of Installation (outdoor) = 15 - 25 feet
Focusing on the monitoring zone
No occlusion scenario
Works with fixed cameras

Note: The height of camera is variable as it depends on lens coverage.

TECHNICAL HIGHLIGHTS

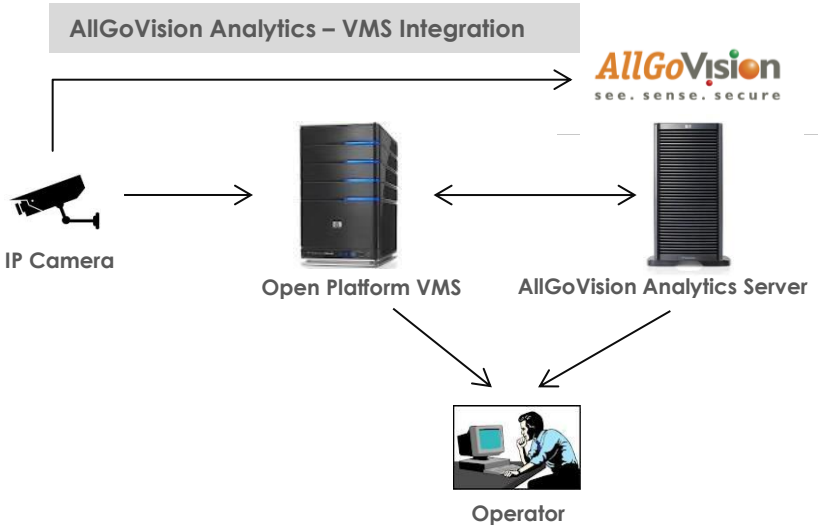
- ✓ Detect presence of Fire or Smoke in the Field of View of designated camera using AI based algorithm
- ✓ Alerts are generated if Fire and/or Smoke is detected in the region of interest
- ✓ Fire / Smoke detected using camera itself hence no additional sensors are required
- ✓ Larger coverage compared to traditional sensors
- ✓ Works in indoor / outdoor installations as well as during day and night.
- ✓ Low false alarm rate

INTEGRATION FLEXIBILITY

AllGoVision Fire and smoke application is available in 2 flavours:

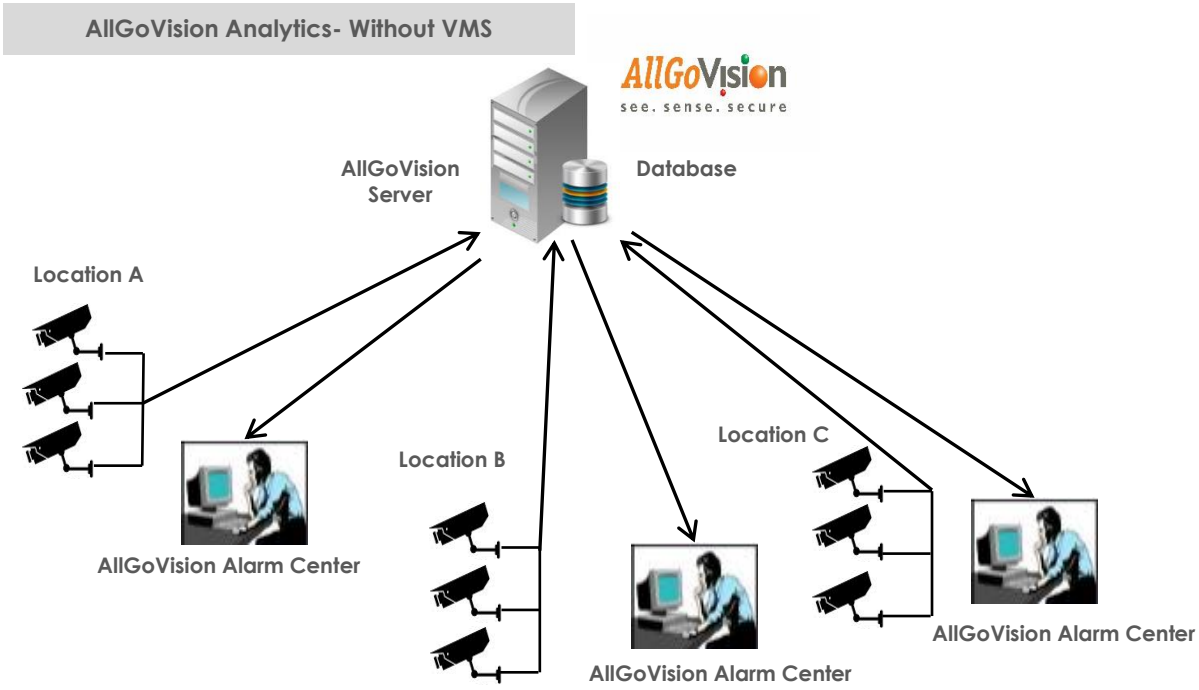
With VMS:

AllGoVision application is based on Open Platform Standards.
It is integrated with many open platform VMS.



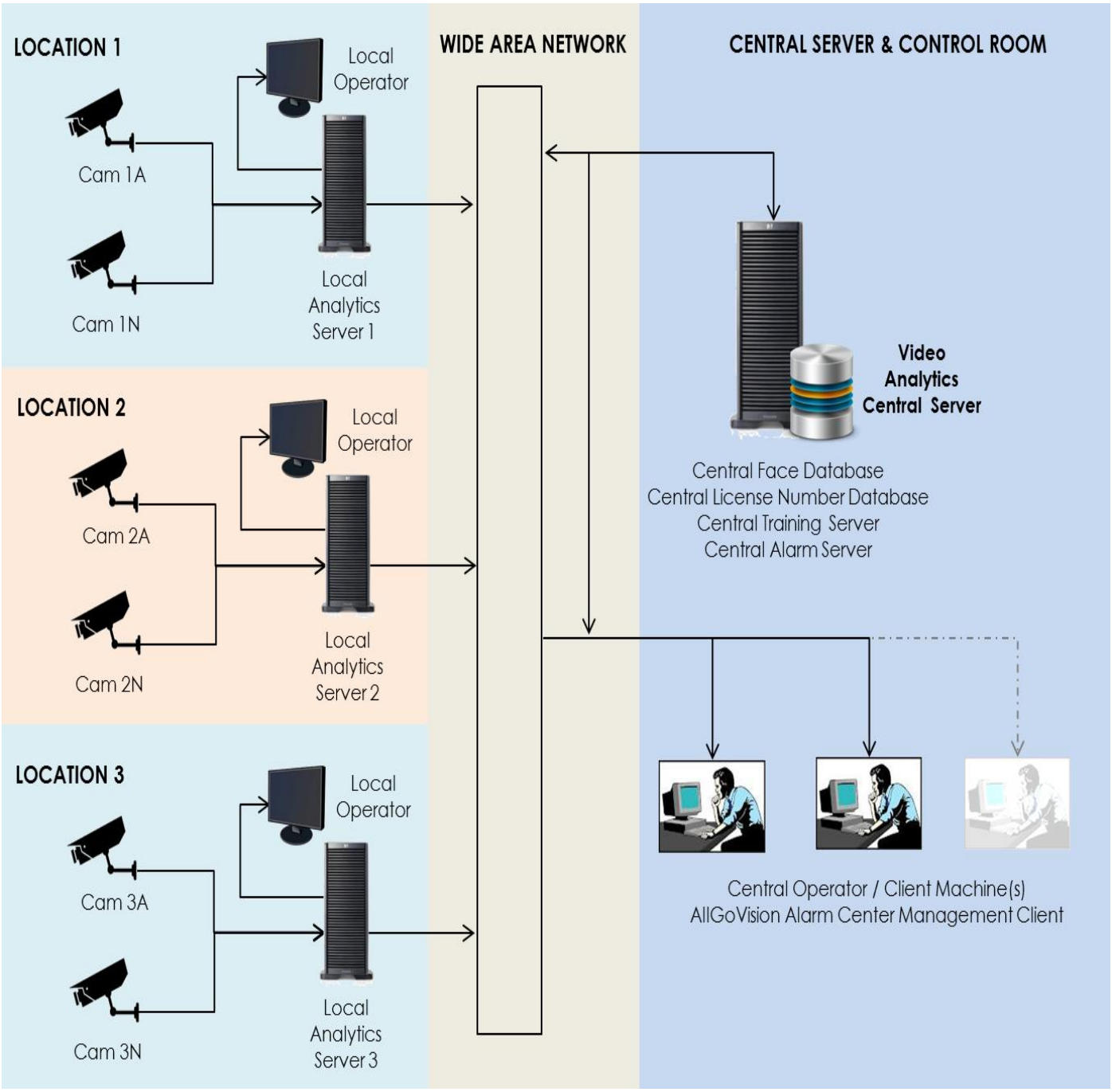
Without VMS:

- It is a standalone application.
- Directly takes the video feed from camera.
- The alarms and reports are seen in AllGoVision Alarm Center.



Federated Architecture

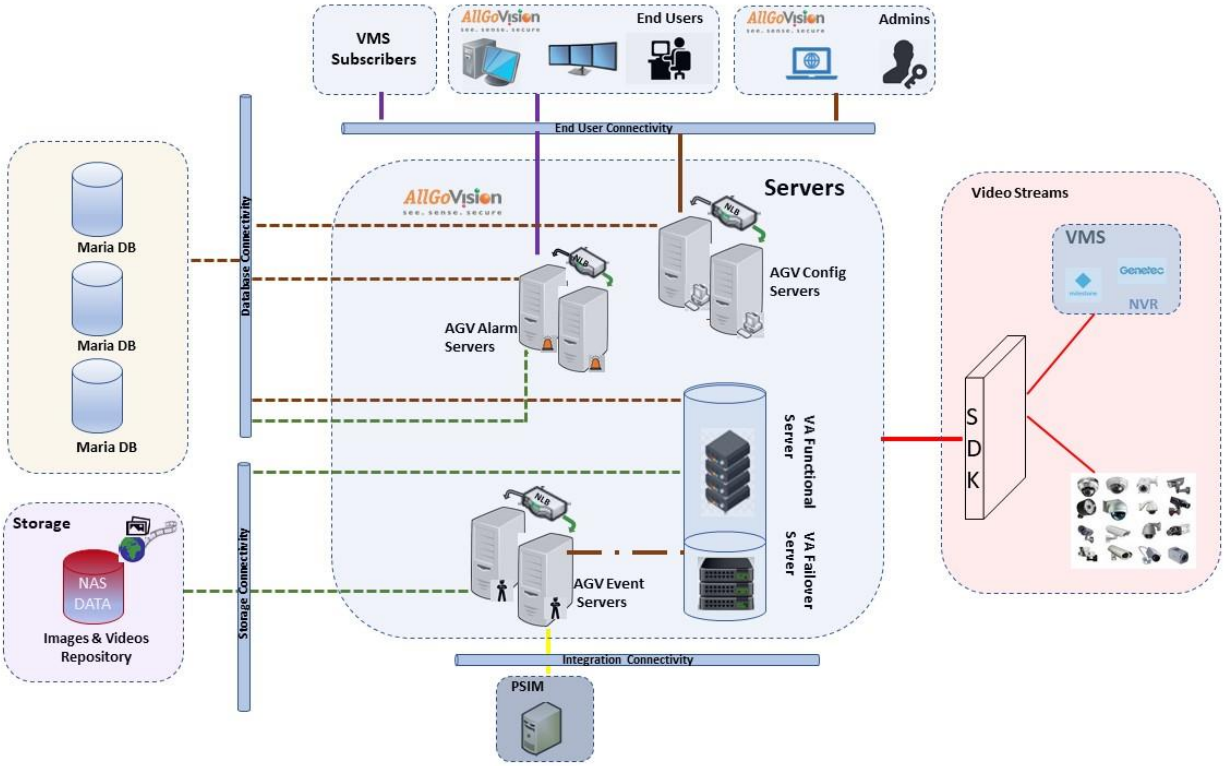
- With Federated Architecture, analytics can be done at local servers and viewed by local operators.
- A central server with a central operator can view all the alarms in the system generated by all the local servers.
- Alarms from different clients can be seen at the central Alarm Center and alarms are differentiated through Client IDs.


LOCATION 1
Local Operator
Cam 1A
Cam 1N
Local Analytics Server 1
LOCATION 2
Local Operator
Cam 2A
Cam 2N
Local Analytics Server 2
LOCATION 3
Local Operator
Cam 3A
Cam 3N
Local Analytics Server 3
WIDE AREA NETWORK
CENTRAL SERVER & CONTROL ROOM
Video Analytics Central Server
Central Face Database
Central License Number Database
Central Training Server
Central Alarm Server
Central Operator / Client Machine(s)
AllGoVision Alarm Center Management Client

Redundancy / Failover

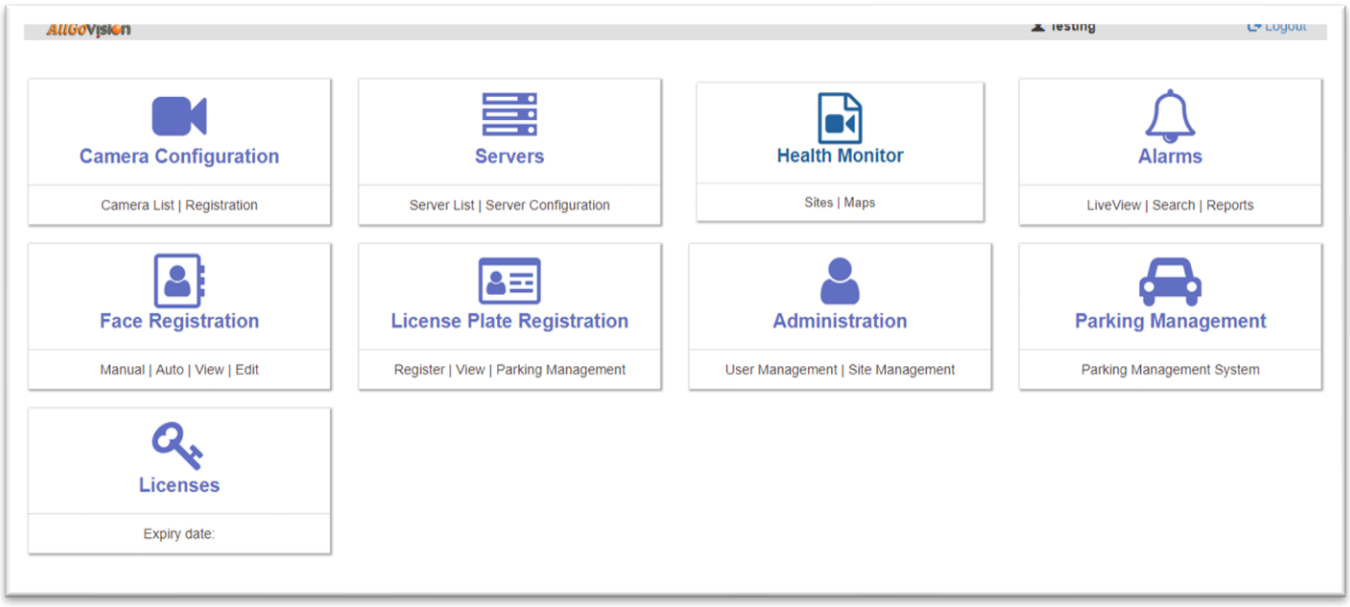
- Config Server can be setup for active/passive redundancy. NLB is used to manage the Active/Passive redundancy. When the active Config Server is up, all requests will be serviced by it. Only when it is down, requests are serviced by the passive Config Server.

- For video analytics, redundancy is achieved by having redundant server capacity for N:1 or 1:1 redundancy. When one or more VA Servers fail, the analytics pertaining to the cameras running in that server are re-assigned to a pre-designated set of servers.

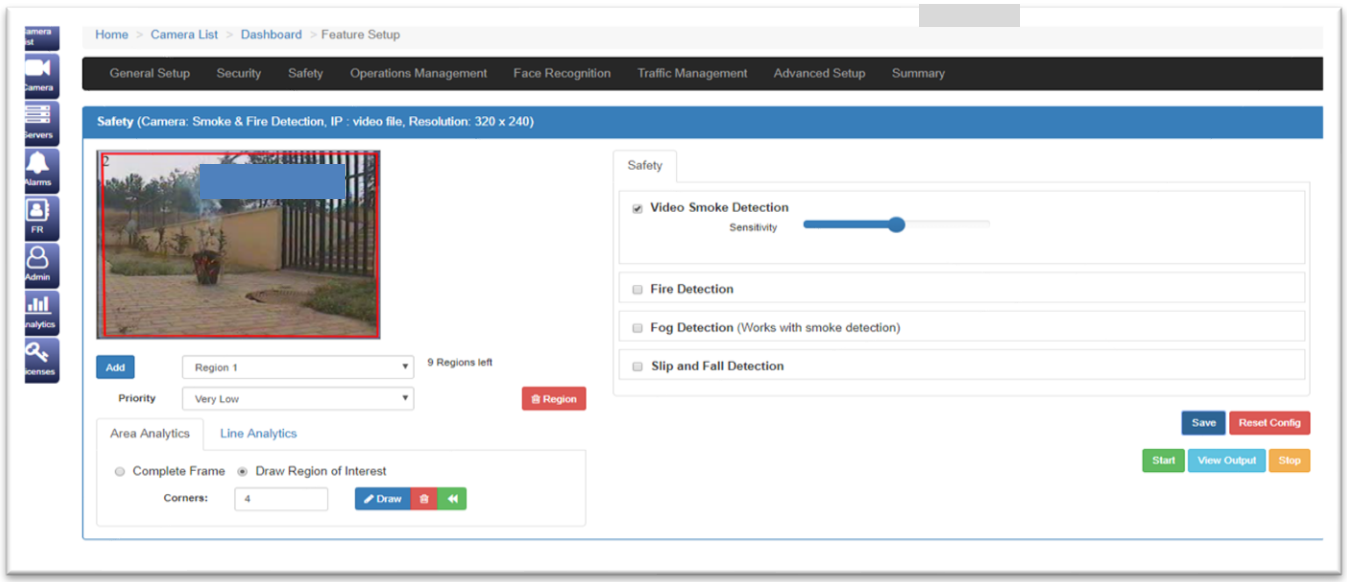


ALLGOVISION GUI

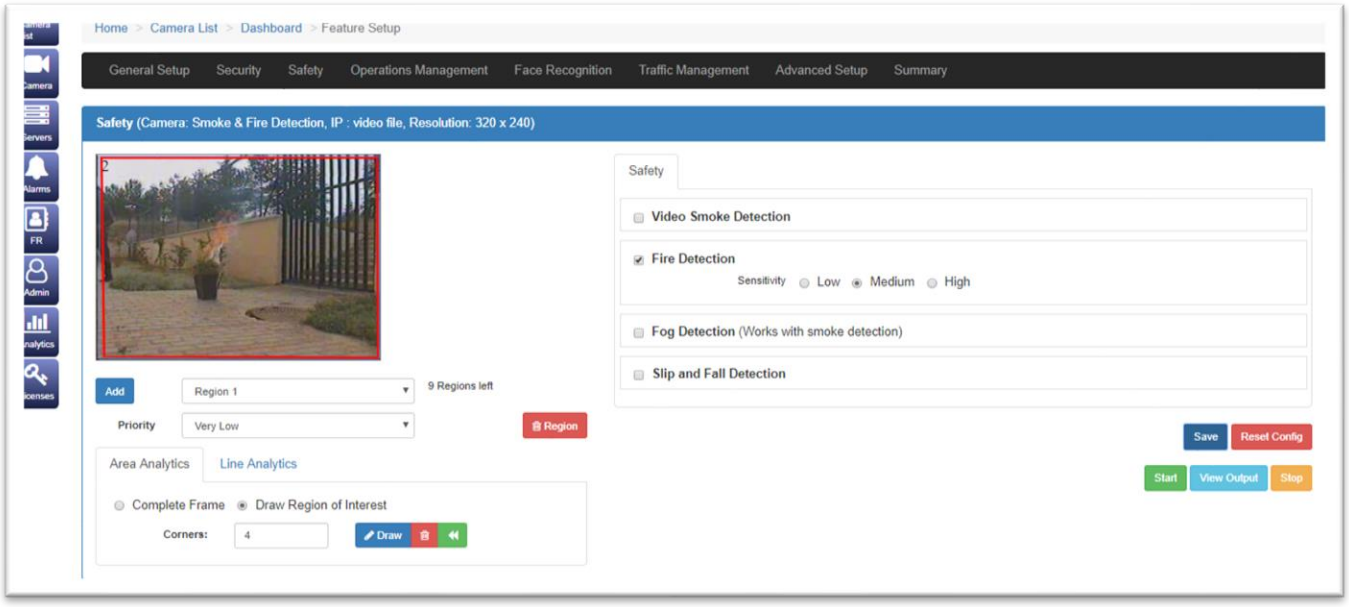
AllGoVision product offers a graphical user interface with the choice of native windows-oriented, tab based, point and pick interface along with the Web UI. The options are provided to add cameras directly or from VMS, provide configuration and view alarms whenever an event occurs.



AllGoVision Dashboard



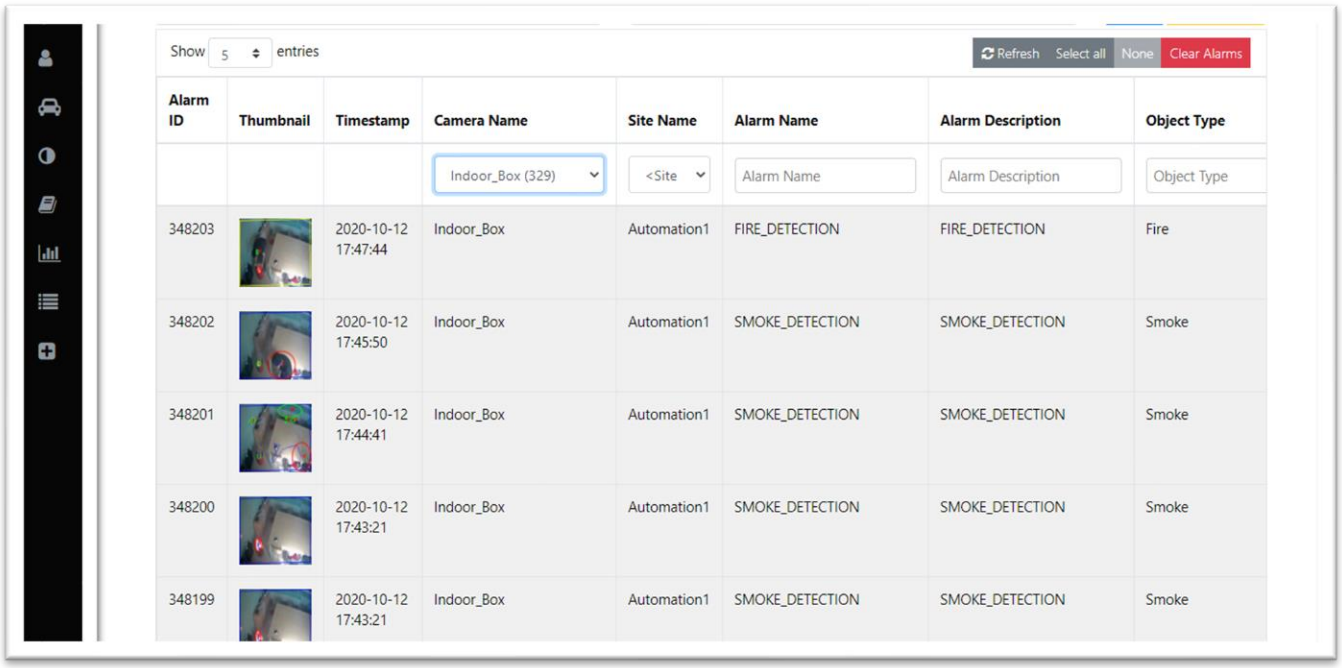
Smoke Detection Configuration



Fire Detection Configuration

ALLGOVISION ALARM CENTER

AllGoVision Alarm Center is a Client to view all the alarms generated by AllGoVision analytics running on the same machine or running on different systems in the same network. It also supports report generation.



Fire and Smoke Detection alarms in Alarm Center