AllGoVision

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Datasheet

AI Video Analytics

Version 4.0

This Specification Sheet gives the details of system requirements, features and other salient points of AllGoVision AI Powered Video Analytics.

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INTRODUCTION

This Data sheet gives the details of system requirements, features and salient points of AllGoVision.

AllGoVision is a Video Analytics software product for actionable intelligence in security installations. The product provides excellent return on investment for a wide range of applications, including City Surveillance, Building Surveillance, Business Intelligence, Loss Prevention, Consumer Behavior Analysis, Intelligent Traffic Management, Parking Management and many more.

The technology evaluates the contents of video to rapidly determine the specific information about the video contents like specific data, behavior patterns, tracking movement of people/objects in monitoring zones.
AllGoVision offers Full Deep Learning Analytics, where all the features of AllGoVision are enabled with Deep Learning. Deep Learning is utilized by AllGoVision for accurate and fast Object Detection, Object Recognition, Object Classification and Object Tracking.

Deep Learning: AllGoVision, is one of the few companies using Artificial Intelligence (AI) powered analytics which uses Deep Learning in its Video Analytics features. Deep Learning in Video Analytics involves the use of layered filters which enhance the detection rate of objects and rule-violations. In all the security problems being solved by Video Analytics, there is an object which can be a person, vehicle, animal, face, etc. and the first step is to detect the object accurately. With the use of layers of filters, the accuracy of detecting the right object becomes high and there are very few false detections. The second step is to find out the activities being done by the detected objects as these activities can be rule-violations. For eg., a person (object) can loiter (activity) around in a restricted zone. The detection of such activities is enhanced through the layered filters of Deep Learning. Similarly, the third step, which is tracking the object post the rule-violating activity is also improved.

Security features – Deep learning provides accurate classification and detection. This reduces false alarms for external lights, animals, birds and light changes.

Suspicious Incidences – Deep learning minimizes false alarms for shadows, external lights and false objects.

Face Recognition – Better match with Deep learning. This is robust to lighting changes. A single mugshot image can be used as the registration image.

SYSTEM REQUIREMENT

AllGoVision analytics has the following system hardware and software requirements.

CATEGORY	REQUIREMENT
Operating System	**Workstation**: Windows 10 **Server**: Windows Server
Network	Ethernet, 1 Gbit or higher recommended.
Hardware Requirement	x86 Platform, 64 bit, AVX support
Server requirement (for QVGA resolution)	Core i7 (6 Cores), 3 GHz, 8 GB RAM for up to 15 channels Xeon 6 core, 3 GHz, 8 GB RAM for up to 15 channels Xeon 12 core, 3 GHz, 16 GB RAM for up to 30 channels (approx. 2.5 channels per core, suitable to add multiple CPUs in single server) Supports Nvidia GPU acceleration for Face Capture & Recognition (approx. 1 channel per 2 cores for Face Recognition based features) **Note**: Actual Configuration will be based on the use-cases and features
Frame Rate Requirement	>8 fps for Security Analytics (Perimeter Protection/Intrusion), Face Recognition >15 fps for PTZ Analytics, People Counting, Traffic features and LPR.
Stand Alone version camera support (Works with/without VMS)	Models from Axis, Pelco, Bosch, Sony, Honeywell, Hikvision, Dahua, Panasonic, Brickcom, Indigovision, Cisco, Samsung, Acti, Vivotek, FLIR, Digital Watchdog, and others (ONVIF Cameras). Any other camera requires URL to connect camera and get video feed. Supports MJPEG, H.264, MPEG4 Supports ONVIF camera, ONVIF PTZ control
VMS/NVR supported	Milestone, Genetec, Indigovision, Exacqvision, Cisco, Honeywell, Digital Watchdog, WaveStore. Verint, Bosch Supports other VMS/NVR with direct camera connection & Alarm Center Client Supports PSIA standard alarms to integrate with VMS, Control Center

COMPREHENSIVE SOLUTION

The AllGoVision Analytics is robust to weather changes, lighting changes, tree swaying and other background distractions. AllGoVision also works well in crowding conditions. AllGoVision supports object classification, Object Detection through **Deep Learning** and is highly effective for the Classification of objects.

The software is easy to install and simple to use with intuitive GUI. AllGoVision also supports customization through variation of features for specific applications. AllGoVision supports distributed architecture. Following are the salient features and options supported in AllGoVision.

- Supports both native Windows UI and Web UI
- Administrator Login
- Scheduler to enable scheduling of Analytics
- Failover server
- ONVIF streaming of analytics overlaid video, video stabilization
- Alarm video creation and Snapshot creation
- False Alarm Minimization with Deep Learning
- Direct Camera Connection
- Supports video analytics configuration on locked pre-set of PTZ camera
- Option to run the Application as a Windows Service
- People/Object/Vehicle counting report generation
- Auto Emailer & FTP upload options for reports
- Save, Export and Restore options for Analytics Settings of each Camera
- Metadata Storage & Search for object's Type, Time, Color, Size, Speed and Aspect Ratio
- Privacy Masking options – face masking, object masking and masking of view
- Logical operation on Alarms
- Both Server based and Edge based (on camera) analytics capabilities
- Multi-region Analytics on a single frame (alerts for multiple features/regions simultaneously)
- Options for Naming & Priority Settings for the regions.
- AllGoVision has its own alarm management client **Alarm Center**, providing below features:
    - Provides real time alarm snapshot and video. The database requirement is MySQL.
    - View / Search / Reporting & Analysis options for AllGoVision's video analytics alarms
    - Options for alarm Pop-up, Preview, Playback, Thumbnail view & Video Summary
    - Alarms filters based on object properties – time, type, color, size, speed & aspect ratio
    - Live View option for video wall and Live Reporting options
    - Provides search capability for Forensic Search based on metadata / object properties.
    - Analysis tools for operations management: Heat Map, Motion Map, Flow Map.
    - Reporting in pdf, jpeg, excel, text file and scheduling reports for email & FTP.
    - Provides comparison reports for time series analysis.
    - Supports following clients for video analytics based applications
        - Parking Management display
        - Multi Camera Tracking & Camera Mapping
        - Face Recognition client
        - License Plate Recognition client

VIDEO ANALYTICS PACKAGES & FEATURES

AGV-VA | **AllGoVision Video Analytics Software**

SECURITY

AGV-VA-PKG-INTR-B | **INTRUSION DETECTION - BASIC**

AGV-VA-TRPW	Tripwire*
AGV-VA-TRSP	Trespass*
AGV-VA-TMPR	Camera Tampering*

AGV-VA-PKG-INTR-A | **INTRUSION DETECTION – AUTO PTZ**

AGV-VA-PTZC	Continuous Auto PTZ
AGV-VA-PTZH	PTZ Handoff
AGV-VA-PTZP	PTZ Pre-set Position Analytics

AGV-VA-PKG-SUSP-O | **SUSPICIOUS INCIDENCE - OBJECT**

AGV-VA-LODT	Left Object Detection*
AGV-VA-MODT	Missing Object Detection*

AGV-VA-PKG-SUSP-P | **SUSPICIOUS INCIDENCE – OBJECT**

AGV-VA-TGDT	Tailgating Detection* (Person/Vehicle)
AGV-VA-LTDT	Loitering Detection*

AGV-VA-PKG-SUSP- OC | **CLASSIFICATION**

AGV-VA-OBCL | Object Classification

ADVANCED SAFETY

AGV-VA-PKG-ADVS-C | **CROWD MANAGEMENT**

AGV-VA-CRDT	Crowding Detection*
AGV-VA-CCNT	Crowd Counting*
AGV-VA-CFDT	Crowd Flow Detection*

AGV-VA-PKG-ADVS-S | **ADVANCED SAFETY – SMOKE**

AGV-VA-VSDT | Video Smoke Detection

AGV-VA-PKG-ADVS-F | **ADVANCED SAFETY – FIRE**

AGV-VA-VFDT | Video Fire Detection

AGV-VA-PKG-ADVS-P | **ADVANCED SAFETY – PERSON**

AGV-VA-SFDT | Slip & Fall Detection

ENHANCED MONITORING

MASKING

AGV-VA-FAMS	Face Masking (Privacy Masking)
AGV-VA-OBMS	Object Masking
AGV-VA-ONST	ONVIF Streaming

BUSINESS / RETAIL INTELLIGENCE

AGV-VA-PKG-CNTG-P | **PEOPLE COUNTING & REPORTING**

AGV-VA-PPLC	People Counting*
AGV-VA-RPAN	Reporting & Analysis

AGV-VA-PKG-MGMT-Q | **QUEUE MANAGEMENT**

AGV-VA-QUMT | Queue Management

TRAFFIC & PARKING MGMT.

AGV-VA-PKG-MGMT-T | **INTELLLIGENT TRAFFIC MANAGEMENT**

AGV-VA-VHLC	Vehicle Counting*
AGV-VA-WWDT	Wrong Way Detection*
AGV-VA-IPDT	Illegal Parking Detection*
AGV-VA-SPDT	Speeding Detection
AGV-VA-CNDT	Congestion Detection
AGV-VA-RLVD	Red Light Violation Detection

AGV-VA-PKG-MGMT-P | **PARKING MANAGEMENT**

AGV-VA-PRMT | Parking Management (Availability)

AGV-VA-PKG-LPDR-A | **LICENSE PLATE RECOGNITION**

AGV-VA-LPDT	License Plate Detection
AGV-VA-LPRC	License Plate Recognition

FACE DETECTION & RECOGNITION

AGV-VA-PKG-FACE-D | **FACE DETECTION**

AGV-VA-FCDT | Face Detection / Face Capture

AGV-VA-PKG-FACE-R | **FACE RECOGNITION**

AGV-VA-FCRC | Face Recognition / Verification

SEARCH & ANALYSIS

AGV-VA-PKG-SRCH-A | **SEARCH & ANALYSIS**

AGV-VA-HEAT	Heat Map
AGV-VA-FLOW	Flow Map
AGV-VA-SITE	Site Map
AGV-VA-MDAS	Smart Subject Search

For details on any feature, please contact AllGoVision

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* : The features are available on the edge.

Note: The Product, Package & Feature Ids are given in Orange coloured codes

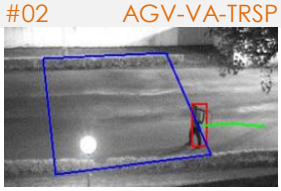
BRIEF DESCRIPTION OF FEATURES

#01 AGV-VA-TRPW Tripwire

Detection of a person or vehicle crossing (or touching) a virtual line drawn in the camera field of view. The line crossing event can be detected for both directions.

Example: Intruder detection on fenced areas, alert monitoring at the entrance, detection of illegal crossing of railway lines or getting closer to a restricted zone.

#02 AGV-VA-TRSP Trespass



Detection of a person or vehicle entering or exiting virtual area drawn by the user.

Example: Intruder detection in restricted areas. Illegal entry into secured zones in Banks, Stores, Plants. Entry of person or vehicle into restricted area or exit from that.

#03 AGV-VA-TMPR Camera Tampering

Detection of camera tampering efforts by camera focus change or view obstruction or video cable cut.

Example: Sabotage attempts by vandals (initiated with camera tampering) are detected and alerted and security personnel can take necessary actions.

#04 AGV-VA-LTDT Loitering Detection

Detection of a person's or vehicle's persistence beyond a specified time (set by the user) in a monitored virtual area in the camera field of view.

Example: People loitering in malls even after closing hours; people or vehicle having longer dwell time in restricted area; people persistence near critical assets.

#05 AGV-VA-TGDT Tailgating Detection

Detecting a person (individual) or vehicle following too closely the person or vehicle in front to get past access controlled entrances or barriers (like boom barriers).

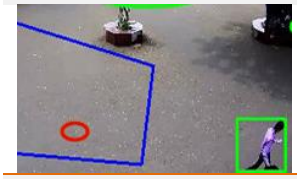
Example: Unauthorized access at the mall entrance, gated communities, office premises, factories.

#06 AGV-VA-LODT Left Object Detection

Detection of any object left behind in the monitored zone by a moving agent such as the owner of the object or baggage.

Example: Threat detection due to baggage left unattended in public places like malls, roads, railway station, airports etc. Unmindful passenger leaving any luggage.

#07 AGV-VA-MODT Missing Object Detection



Detection of object(s) removed from the monitored zone in the camera view.

Example: Detection of removal or theft of precious items like paintings hanging on a wall. Critical Asset protection. Artefacts protection in museums, etc.

#08 AGV-VA-PTZC Continuous Auto PTZ Tracking

Automatic tracking of object (Single or Multiple) using Pan-Tilt-Zoom (PTZ) camera.

Example: Continuous tracking of objects like intruder; Continuous tracking of vessels in Sea.

#09 AGV-VA-PTZH

PTZ Handoff

Violation detected on any Fixed camera triggers PTZ camera to its view for auto tracking of the violator object.

Example: Auto tracking of intruder with one PTZ camera covering multiple Fixed cameras, for instance, along the compound perimeter.

#10 AGV-VA-PTZP

PTZ Pre-set Position Analytics

Different PTZ pre-set positions can be assigned to different regions and analytics can be run to monitor each of those pre-set positions.

Example: Analytics can be applied for monitoring various regions of interest in a wider zone within the range of a PTZ camera.

#11 AGV-VA-CRDT

Crowding Detection

Detects crowd in the camera field of view / region of interest, and when the crowd formation goes beyond a specified threshold (crowd count / percentage of area) alerts against the over-crowing scenario.

Example: Detecting illegal gathering of masses, or getting alert for overcrowding scenario in public places (malls/railway stations/airports) and entry/exit/lobby areas.

#12 AGV-VA-CCNT

Crowd Counting

Measures the crowd level in terms of number of people occupying a specified region of interest in the camera field of view, provides live crowd count on screen

Example: In festivals & public places crowd counting is used for crowd management and for taking corrective action against crowd surge or overcrowding

#13 AGV-VA-CFDT

Crowd Flow Detection

Analyses crowd movement patterns in different direction and marks it by different colours, and detects and movement of crowd in undesired direction.

Example: Crowd movement tracking and crowd counter flow detection can help in avoiding mishaps due to crowd movement in wrong directions.

#14 AGV-VA-VSDT

Video Smoke Detection

Detects presence of smoke for both indoor & outdoor environments within only 5-10 seconds when it appears in the camera view and covers more than 10-15% of area.

Example: Rapid detection of smoke as an early warning for smoke generation / initiation of fire in large indoor/outdoor areas, Warehouses, Server and Data rooms.

#15 AGV-VA-VFDT

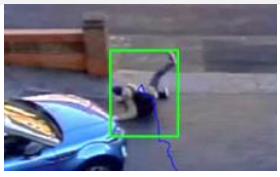
Video Fire Detection

Detects and alerts rapidly (in 5-10 seconds) against presence of fire in the camera view / monitored zone even when it is formed in 10-15% of the view.

Example: Rapid detection of fire as an early warning for avoiding huge loss & greater impact due to fire hazards in Oil & Gas plants, critical infrastructure etc.

#16 AGV-VA-SFDT

Slip & Fall Detection



Detection of person slipping and falling on ground.

Example: Used towards human safety, as necessary care could be taken promptly against alarm generated for slip & fall of people in Malls, Airports, Metro etc.

#17 AGV-VA-OBCL

Object Classification*

Detects objects and classifies them as people or vehicle.

Example: Used for intelligent monitoring where other video analytics alerts are required only for certain type of moving object (either person or vehicle)

*Uses Deep Learning

#18 AGV-VA-FAMS

Privacy Masking / Face Masking

Ensures privacy by masking the faces of people in video stream from cameras at public places. While recording stream stores the unmasked video, the masked video is used for display or monitoring purpose.

Example: The masked video ensures privacy requirement for people in surveillance zones while not compromising the raw video footage stored for evidence purpose.

#19 AGV-VA-PPLC

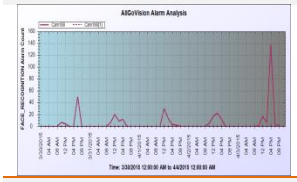
People Counting

Counts the number of people traversing a certain passage. While angular camera can also be used, best results are achieved with head detection in overhead camera at entry / exit. Counts are provided in both directions (coming in/going out)

Example: People counting to analyse foot fall statistics in malls, retail stores etc. Conversion factor can be calculated by comparing footfall data with sales figures.

#20 AGV-VA-RPAN

Reporting & Analysis



AllGoVision provides extensive reporting and analysis options. Reports are generated in multiple formats (PDF, CSV, TXT, JPEG) with tables and plots. Reports can be scheduled for auto-emailer or FTP upload. Alarm Analysis and Comparison reports are also supported.

Example: Used in business decision making and time series analysis.

#21 AGV-VA-QUMT

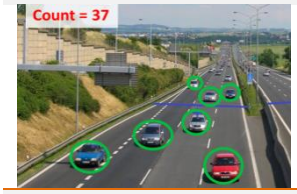
Queue Management

Detects queue properties for waiting time analysis (Ingress – in flow, Egress – out flow,

Example: Used in service counters, ticket counters / travel desk, check in counters, flight boarding areas for waiting time analysis and improvement of service process.

#22 AGV-VA-VHLC

Vehicle Counting



Counting of vehicles that cross a virtual line in a vehicle lane or entry / exit gates.

Example: Vehicle movement statistics for traffic study, traffic density calculation etc.; multi-lane vehicle counting; vehicle queue length and waiting time analysis at toll plaza etc.

#23 AGV-VA-WWDT

Wrong Way Detection

Detects vehicle movement in a direction opposite to user specified direction.

Example: Vehicle moving in wrong direction in one way road system; vehicles exiting / entering wrongly through entry only / exit only areas.

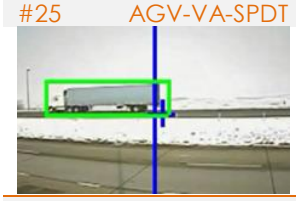
#24 AGV-VA-IPDT

Illegal Parking Detection

Detects parking or stopping by any vehicle in a specified virtual area (no parking zone or restricted zone) beyond a specified period.

Example: Illegal parking on road sides, in no parking areas or restricted zones, Illegal parking of the vehicle in front of the entry/exit gates.

#25 AGV-VA-SPDT Speeding Detection



Detects speeding of any vehicle above specified speed limit observed in camera installed parallel to the road.

Example: Over speeding vehicles on highways, city roads and campus pathways.

#26 AGV-VA-CNDT Congestion Detection

Detects the percentage of area occupied by vehicles and alerts against vehicle congestion as the vehicles occupy area beyond a threshold value.

Example: Detects traffic jams and traffic slowness in zones which have moving traffic otherwise.

#27 AGV-VA-PRMT Parking Management (Availability)

Provides the parking occupancy level and free parking slot availability by detecting vehicle entry and exit by monitoring these transition points in parking lot areas.

Example: Parking management with live parking availability status display at parking lots of malls, offices, factories, residential building complexes, airports etc.

#28 AGV-VA-LPDT License Plate Detection

Detects the presence of vehicle license plate (or number plate) and captures the image of the license plate along with the vehicle.

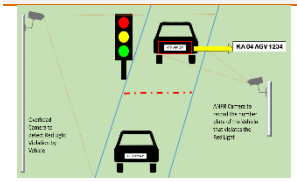
Example: Records keeping of vehicles entering or exiting a specific zone. Used for evidence and monitoring purpose.

#29 AGV-VA-LPRC License Plate Recognition

Extracts / recognizes the license number (registration number) from detected vehicle plates and can verify against a user defined black / white list.

Example: Used for traffic monitoring & law enforcement (detection of traffic rule violation and identification of the associated vehicle, detection of stolen cars etc.); vehicle access control & task automation; automated parking & toll management.

#30 AGV-VA-RLVD Red Light Violation Detection



Detects the Violation of Red Light by a Vehicle and gives an alarm. Can also be integrated with LPR to get the License plate details of the vehicle.

Example: At traffic junctions, Red Light Violations can be detected and the license plate of the violating vehicle can be recognised.

#31 AGV-VA-FCDT Face Detection / Face Capture

Detects and tracks the human face in the camera view, and also captures the face image and stores it in the database for future reference.

Example: Initiation of alarm or systems (to be integrated) which need activation on appearance of any person. Detected and captured faces are used for evidence / monitoring purpose.

#32 AGV-VA-FCRC Face Recognition & Face Verification

Matches the Face detected in the camera view with the registered faces in the database and sends alarms corresponding to match or mismatch.

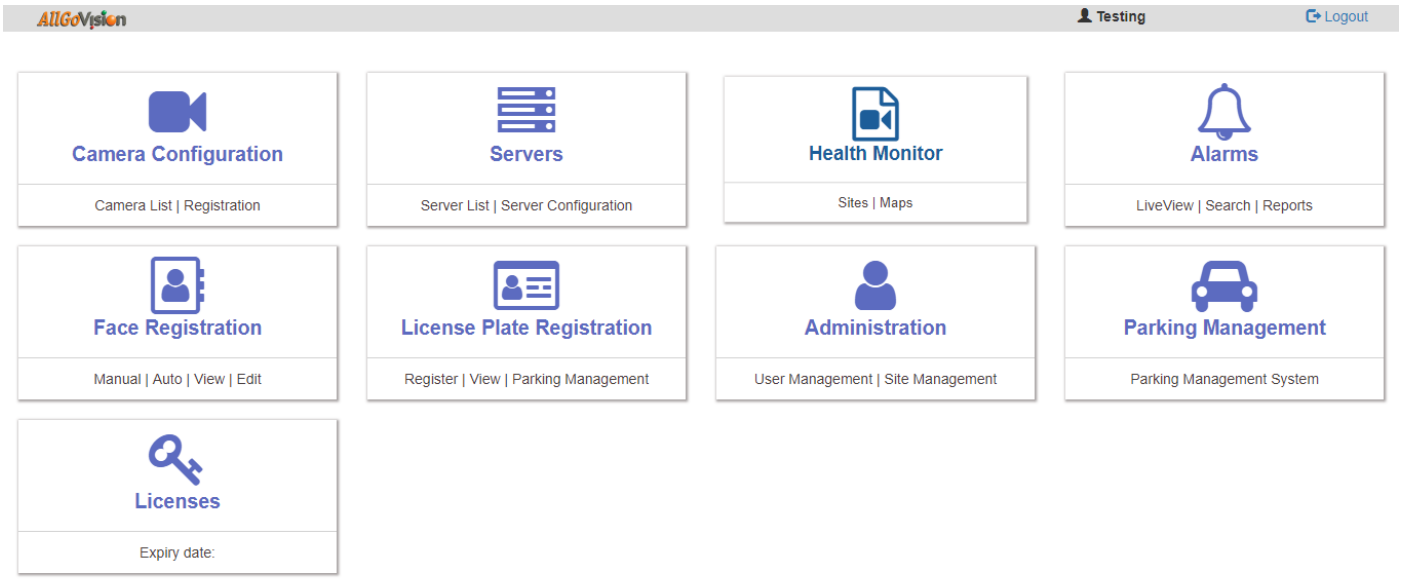
Example: Face recognition & verification is used in multiple applications such as VIP identification, Black List alarm, Forensic Face Search, People Authentication, Attendance Recording & Reporting, and can be integrated with Access Control.

#33 AGV-VA-FACC	Face Counting
	Counts the number of faces in the camera view at an instant and over any specified time period. Example: Viewership / Audience Measurement for digital signage, advertisements / bill boards. Visitor statistics based on number of detected human faces.
#34 AGV-VA-FACP	Face Presence
	Face Presence detects for how much time the detected faces persisted in the camera view and provides plot of time distribution for detected faces. Example: Used in customer / viewer engagement analysis showing the engagement time analysis.
#35 AGV-VA-FACF	Face Frequency
	Face Frequency detects how frequently any recognized face appeared in the camera and provides the plot of frequency distribution for recognized persons. Example: Customer Retention information by analysing the frequency of visit by VIP Guests / Loyalty Customers etc.
#36 AGV-VA-HEAT	Heat Map
	Object movement density represented with color gradient over the monitored area or specified region of interest based on specified time duration. Example: Used in finding customer movement hotspots for product placement. Used in layout optimization in operations management.
#37 AGV-VA-FLOW	Flow Map
	People movement trend map (percentage share for various movement paths) in the monitored zone based on inputs gathered in specified time period. Example: Used in finding customer movement pattern and identifying most popular movement directions, most visited product sections etc. For finding out movement bottlenecks and layout enhancement, if required.

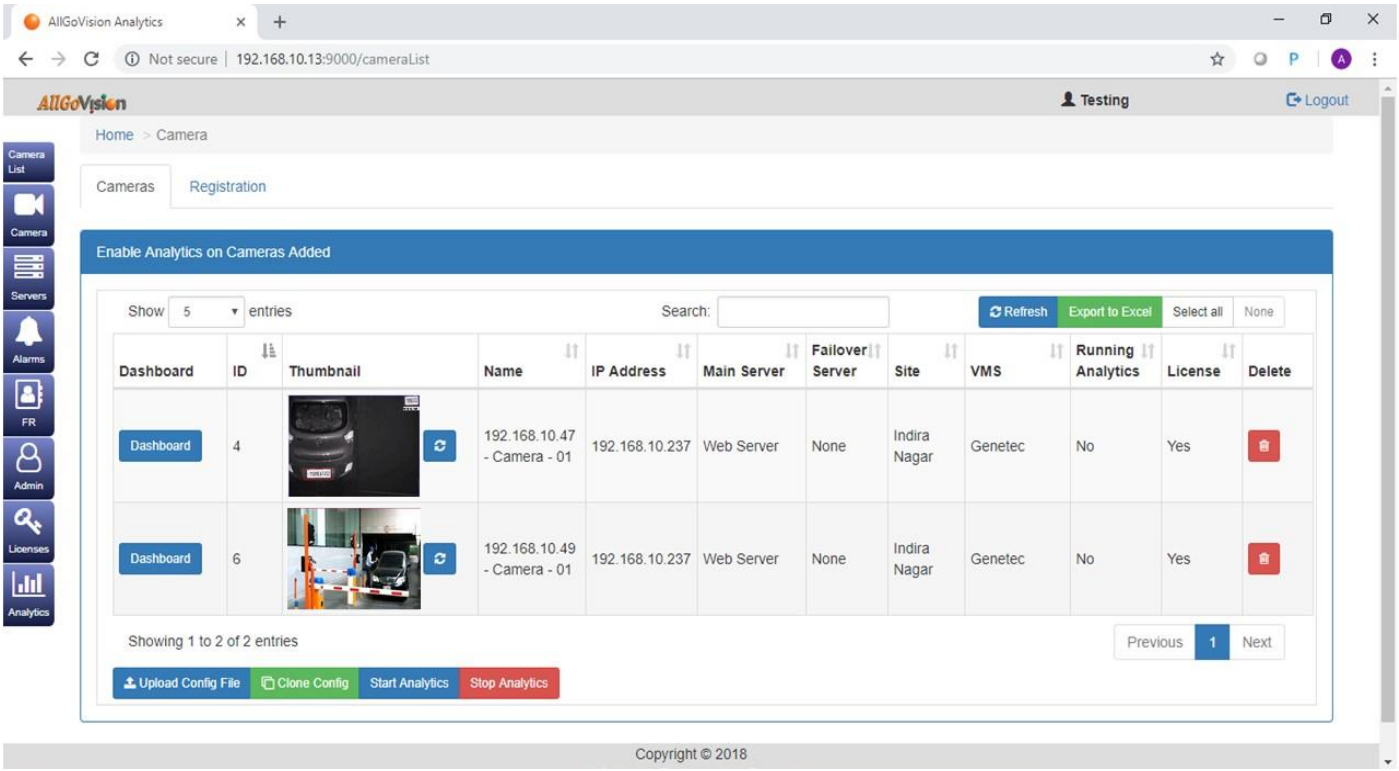
ALLGOVISION GUI

AllGoVision product offers a graphical user interface with Web UI and native Windows UI. The options are provided to add cameras directly or from VMS, provide configuration and view alarms.

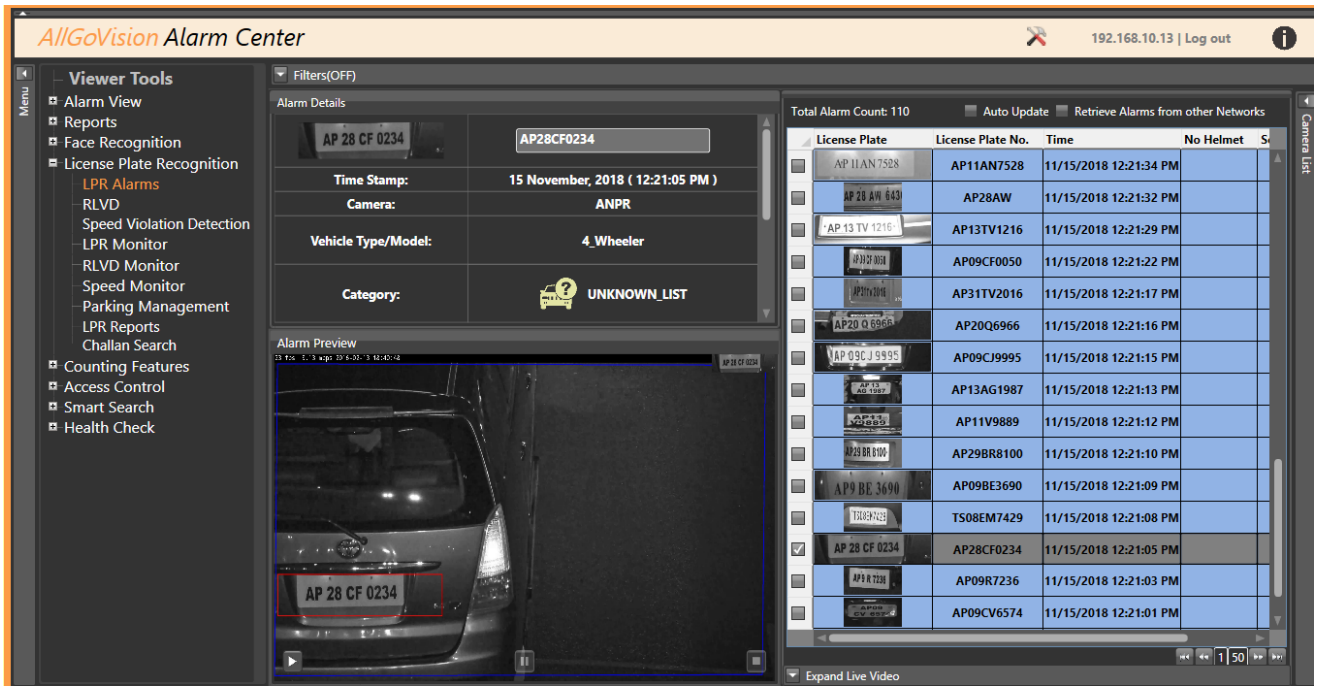
The alarms can be viewed in Web UI or in Windows native application Alarm Centre.



Dashboard



Camera List

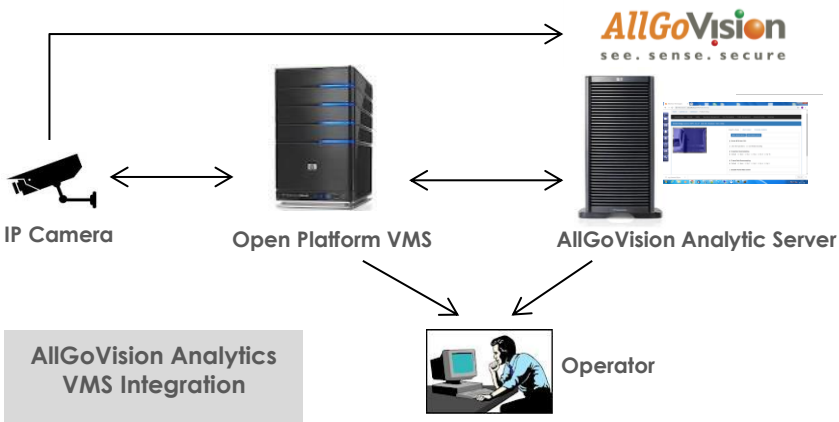


AllGoVision Alarm Center

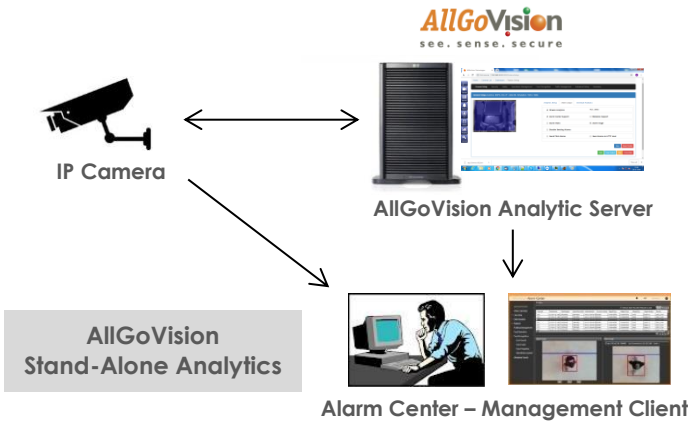
INTEGRATION FLEXIBILITY

The AllGoVision Video Analytics is flexibility in terms of supporting both Server-based and Edge-based analytics. In server based analytics it is available in 2 flavours:

With VMS: AllGoVision application is based on Open Platform Standards. It is integrated with many VMS softwares. It takes video feed either from Camera or VMS, sends alarms to the VMS viewer.



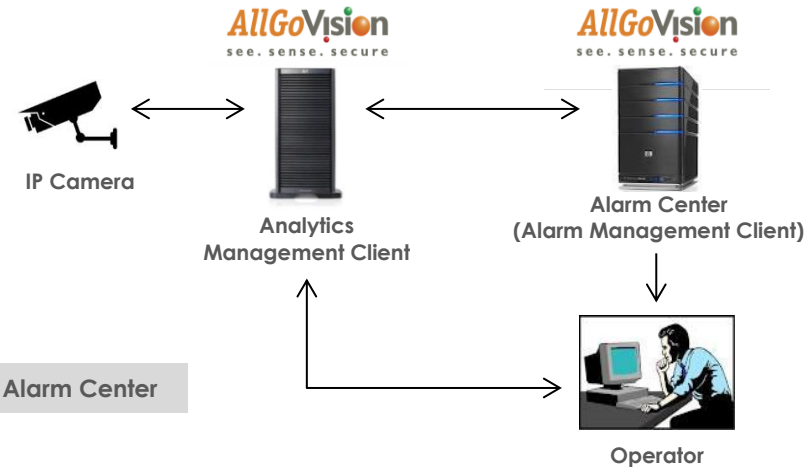
Without VMS: AllGoVision can also work independent of VMS as a stand-alone application, it takes the video feed directly from camera and sends alarms to Alarm Center (AllGoVision's own Alarm Management Client software) and works for view / search / reporting & analysis of alarms.



Edge Analytics: AllGoVision Analytics is also available on Edge on supported cameras. It runs the analytics algorithm directly on the camera based on the settings & configurations done at the AllGoVision GUI end (installed on server/pc). The alarms are sent to and viewed in below options:

1) At the Camera's Management Client
2) At the VMS Viewer (Smart Client) level
3) In AllGoVision Alarm Management Client – Alarm Center

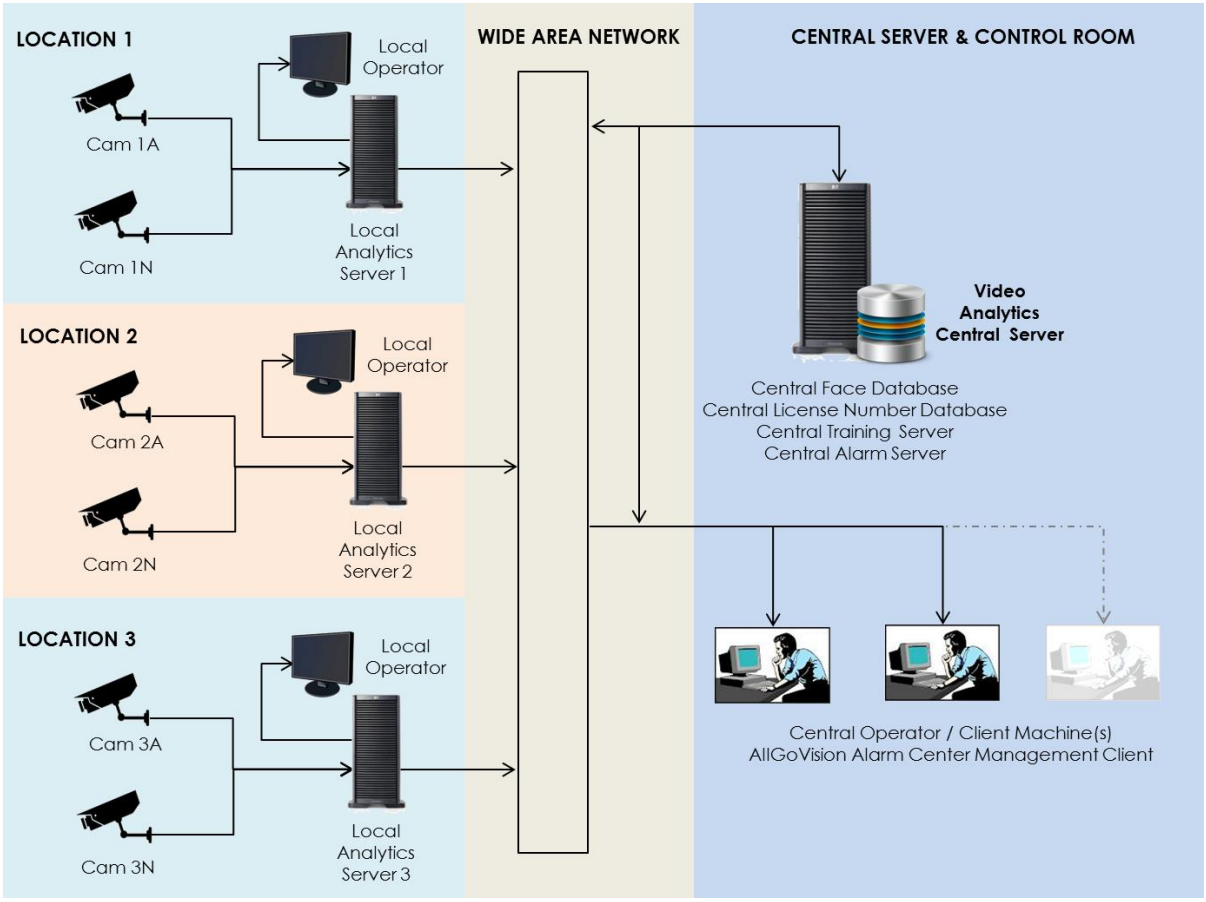
The application runs as Windows service. It supports many channels per server for Edge Analytics and therefore saves extra hardware cost. The features supported in Edge Analytics are marked in the list of features section of this datasheet.



AllGoVision Analytics – Edge – 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.
- Alarms from different clients can be seen at the central Alarm Center and alarms are differentiated through Client IDs.

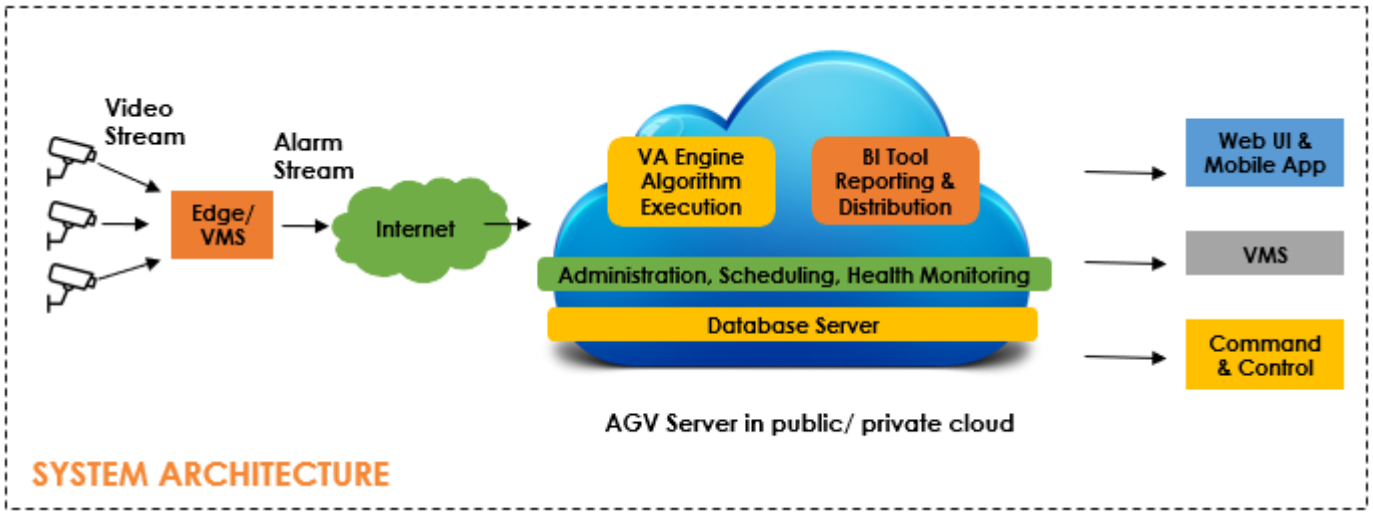


ALLGOVISION ON CLOUD

AllGoVision's Video Analytics features can also be hosted on Cloud. Cloud enabled Video Analytics Service provides a virtual platform for all Video Analytics features. The benefits of Video Analytics on Cloud are mentioned below:

• **OPEX Pricing Model**	✓
• Secured Web Interface	✓
• **Easy Integration – Configuration & Alarms**	✓
• Health Monitoring	✓
• **Infinite Scalability**	✓
• Business Intelligence	✓
• **Single Sign On**	✓

• Dashboard – Alarms/ Reports	✓
• **Multitenant Architecture**	✓
• Real-time Email alerts	✓
• **Multi-site support**	✓
• 3rd party VMS/NVR integration	✓



SYSTEM ARCHITECTURE