AllGoVision

see. sense. secure

Since 2005

Advanced Video Analytics

for

Security & Business Intelligence

AllGoVision Advanced Video Analytics

AllGoVision is a real time enterprise grade advanced video analytics software product developed by AllGo Systems, a leader in Multi-media technology. It is a server based solution with 30 plus basic and advanced features which have been used in a host of application areas in city surveillance, traffic/parking management, building surveillance and business intelligence. Being a specialist in Video Analytics, AllGoVision focuses on Accuracy and Reliable performance.

We are a leading player in the Video analytics industry with 100 plus channel partners in 30 different countries. Our solution is proven with world-wide installations in various industrial segments.

Key Features

- Open-Platform Solution - Integrates with Milestone, Genetec and many other VMS
- Sends Automated Alarms to the VMS viewer application and supports Direct Camera Feed
- Can be installed with VMS on the Same Machine or Separately
- Ability to run Analytics using the EDGE analytics
- Compliant with standard IP camera supported by VMS, provides simple & intuitive GUI
- Comprehensive Solution with Advanced Algorithms and High Level Scene Analysis
- Easy Customization and Enhancements to meet your Specific Requirements
- Higher Number of Channels per Server reducing Hardware Cost, increasing Efficiency
- "Easy to Install and Configure" Software combined with High Quality Support

Video Analytics Applications

City Surveillance

Unauthorized Crossing of Railway Lines
Boundary Surveillance of Critical Infrastructure
Suspicious Object / Unauthorized Baggage Detection
Suspicious Behaviour Detection in Public Places
Unauthorized Crowding / Overcrowding

Traffic & Parking Mgmt.

Effective traffic control at intersections
Detection of illegal traffic behaviour
Toll evasion detection at toll booths
Detection of unauthorized parking
Available parking slot detection

Building Surveillance

Monitoring Entry at Restricted Spaces
Access Control / Black List Identification
Abnormal Behaviour & Unidentified Objects
Early Warning through Video Smoke Detection
Monitoring Important Monuments for Vandals

Business Intelligence

Foot Fall statistics for Business optimization
Queue monitoring to improve queuing time
Reduce Shrinkage
Counting beverages served over the counter
Viewership Detection by Face Capture

Features for City / Building Surveillance
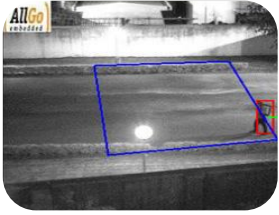
- **Trespass**
- Detection of Person or Vehicle entering a virtual space

- **Tripwire**
- Detection of Person or Vehicle crossing a virtual line

- **Loitering**
- Detection of persistence beyond specified time in an area

- **Left Object Detection**
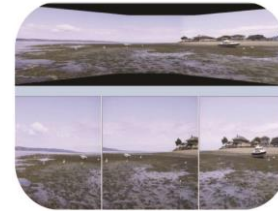- Detecting unauthorized object / baggage left in public place

- **Object Theft Detection**
- Detection of object removal like paintings hanging on a wall

- **Crowd Detection**
- Detecting people gathering in a virtual area

- **Smart Auto PTZ & PTZ Handoff**
- Automatic PTZ for closer view
- Fixed camera triggering PTZ cam.

- **Video Stitching**
- Stitching of 2-8 camera video with object tracking

- **Video Smoke Detection**
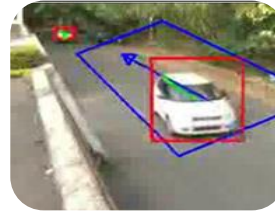- Rapid Smoke Detection for indoor & outdoor environments.

- **Face Capture & Face Recognition**
- Detecting face in the camera FOV
- Matching face with database

Features for Traffic/Parking Management

- **Tripwire**
  - Detection of Vehicle (or Person) crossing a virtual line

- **Trespass**
  - Detection of Vehicle (or Person) entering a virtual space

- **Vehicle Counting / Queue Mgmt.**
  - Counting Vehicles crossing a line
  - Waiting Time Mgmt. for Queues

- **Tailgating Detection**
  - Detecting a vehicle following another too closely to get past access control

- **Video Stitching**
  - Stitching of 2-8 camera video with object tracking

- **Wrong Way Detection**
  - Detecting Vehicle moving in a wrong direction

- **Speeding Detection**
  - Detection of over speeding of the vehicle beyond a threshold speed

- **Illegal Parking**
  - Detecting parking of the vehicle in no parking zone

- **Congestion Detection**
  - Detecting vehicle congestion in a virtual area
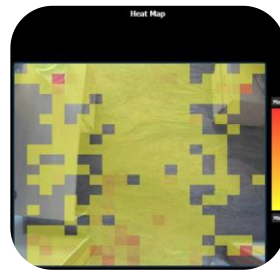
- **Parking Management**
  - Detecting vehicle congestion in a virtual area

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Features for Business Intelligence

- **Trespass**
- Detection of Person or Vehicle entering a virtual space

- **Tripwire**
- Detection of Person or Vehicle crossing a virtual line

- **Left Object Detection**
- Detecting unauthorized object / baggage left in public place

- **Missing Object Detection**
- Detection of object removal like paintings hanging on a wall
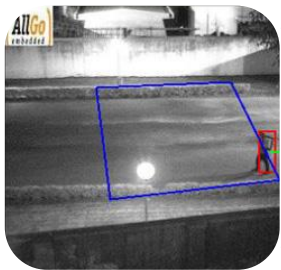
- **Heat Map & Motion Map**
- Ascertain the areas with the greatest frequency and activity

- **Counting**
- Counting of people, or object after crossing a virtual line

- **Meta Data storage & Search**
- provides storage and search of meta data of object properties

- **Face Capture & Face Recognition**
- Detecting face in the camera FOV
- Matching face with database

Perimeter Protection / Intrusion Detection

- Features like Tripwire, Trespass, Loitering, Smart Auto PTZ, PTZ Handoff
- Works for all weather conditions , day and night
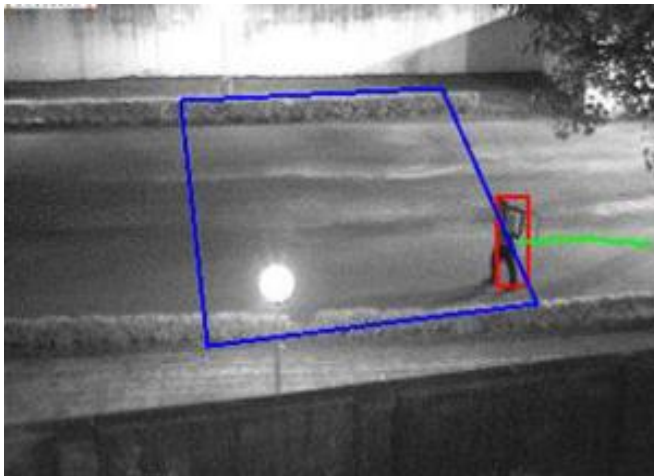- Auto zoom to get closer snapshot of the intruder.
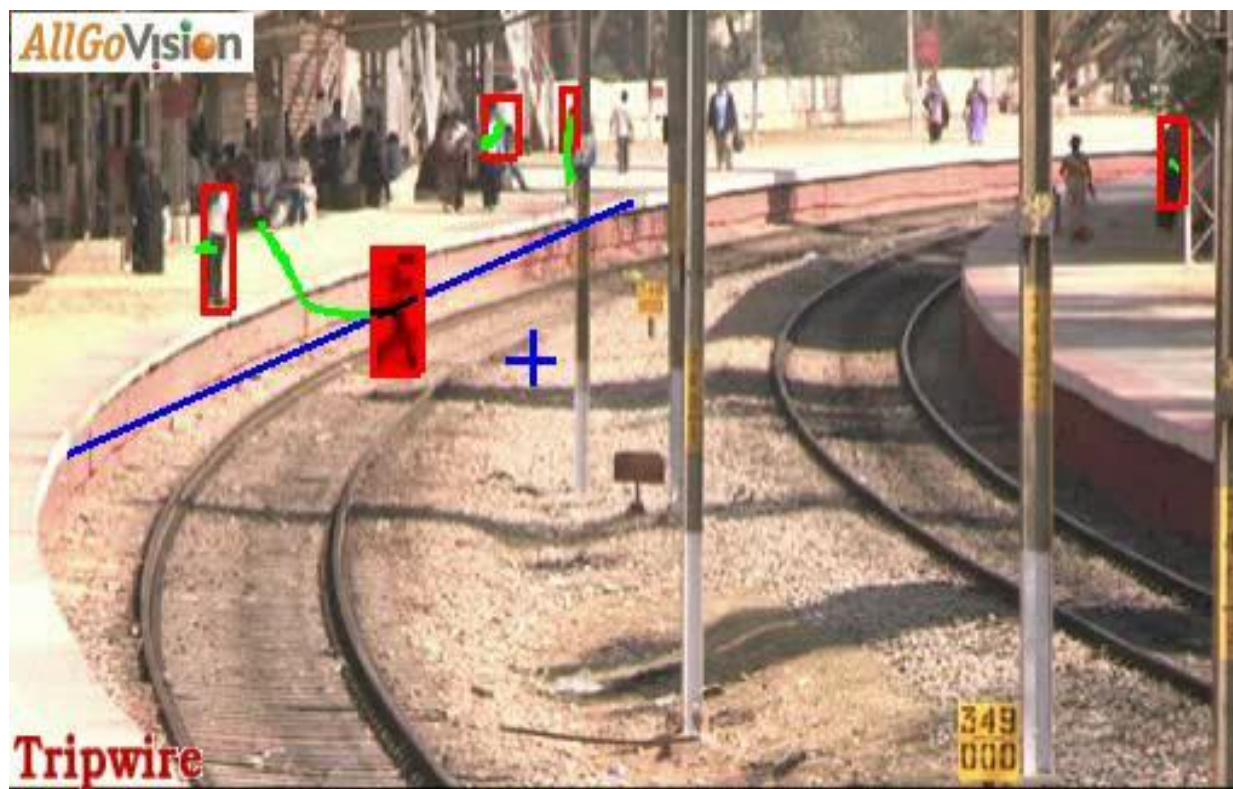
Tripwire & Trespass

Tripwire

Detection of Person or Vehicle crossing a virtual line.

Usage: Intruder detection on fenced areas,

Critical Infrastructure boundaries.

Alert monitoring at the entrance.

Trespass

Detection of Person or Vehicle entering a virtual area.

Usage: Unauthorized entry into a restricted zones,

Alert monitoring at the High Security Areas.

Tailgating Detection

- This Feature detects a person (individual) or vehicle following too closely the person or vehicle in front to get past access controlled entrances or barriers.

- The time gap between the two successive objects is set. Any person or vehicle following within the time gap would initiate an alarm.

- Unauthorized access at the Access Controlled Areas, Toll Gates etc. can be prevented.

Left Object Detection

- When an object is left in the scene for more than predefined time, an alarm will be sent.

- The event will be recorded as left object in system log for later retrieval. This feature ensures security that no unidentified items are left in a defined area

- The detection time is set in seconds and gives raise alarm for up to minutes. The minimum and maximum size of the object can be set.

Missing Object Detection

- When an object is moved out of the outlined area for more than 10-15 seconds a warning message will appear on the live video. The event will be recorded as missing object in system log for later retrieval.

- This application is useful for high security places like data centers, hotels, museums and other places that have valuable items. This is the way of protecting valuables without any human monitoring. With this analytic 24x7 monitoring of the valuable objects is possible.

- The minimum and maximum size can define size limit for the object. The motion sensitivity settings (via unit distance setting) will control false alarms

Loitering Detection

- This feature can detect specified moving objects remain within a designated area of interest (AOI) for a specified period of time within camera's view.

- The detection time is set in seconds and gives alarm for up to few minutes. The minimum and maximum size of the object can be set.

- Provides real-time actionable intelligence to prevent a serious security breach or gathering business intelligence in 24/7/365/indoor/outdoor environments.

Crowd Management

Crowd management detects following events:

- **Crowd Detection:**
  Crowding in a specified area is detected when number of people is exceeded in that area. It can detect sudden crowd surge

- **Crowd Counting:**
  The counting gives approximate count of the crowd in an area. Gives crowd information

- **Crowd Movement Detection:**
  This can detect movement of the crowd in a wrong direction. Prevents mishap

Parking/ Traffic Management

Vehicle counting:
A virtual line can be drawn in camera field of view across the point at which count to be monitored. The application count the vehicles coming IN and going OUT in parking Zone

Illegal Parking:
Raise alarm in case vehicle is parked in no parking zone

Over-speeding Detection:
Identifies in case vehicle exceeds the required speed limits

Wrong way detection:
Detects in case vehicle is moving in opposite direction. Like if vehicle in entering through exit gate, alarm will be raised

Parking Management:
Provides the free slots available for parking in parking place of buildings, malls etc.
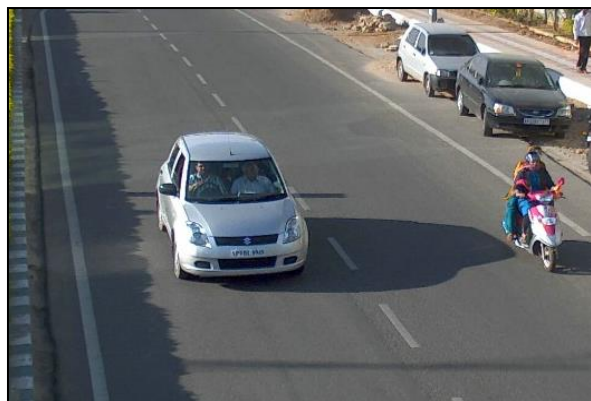
Smart Auto PTZ Zoom

Estimates Violator Position → **PTZ Control automatically captures a closer view of the violator for evidence.** → **Immediately returns to normal position for monitoring**

PTZ Handoff

- Violation detected on Fixed camera triggers PTZ camera for auto tracking of violator

- Example: Auto tracking of intruder with one PTZ camera covering multiple fixed cameras.

Fixed Camera

PTZ Camera

Video Stitching for Effective Surveillance

- Disparate video feeds are stitched together to make one seamless video in real time.
- Stitched Video can be seen in VMS client
- Object tracking available with stitched video
- Used for effective monitoring of large areas.

Video Smoke & Fire Detection

- AllGoVision provides video based smoke detection(VSD).

- VSD will provide smoke detection for both indoor and outdoor environments.

- The smoke detection can provide rapid detection (in 5-10 seconds) of smoke even when smoke is formed in 10-15% of the view.

- The smoke can be with or without fire.

- AllGoVision also provides Fire detection feature.

- Applications: Early warning for Smoke & Fire at Data Rooms / Server Rooms, Critical Resources

People Counting & Reporting

- The application count the people traversing a certain passage.
- The installation can be done in 2 ways.
    1) Angular for applications like city surveillance to cover wider area.
    2) Overhead for the installation like in entry/exit points.
- Accuracy: 90-98%
- The application is integrated with advanced Auto Report E-mailer. The application facilitates in generating and exporting the Text, Graphical Reports.
- Crowd Density Analysis: Includes Crowd Detection & Crowd Counting
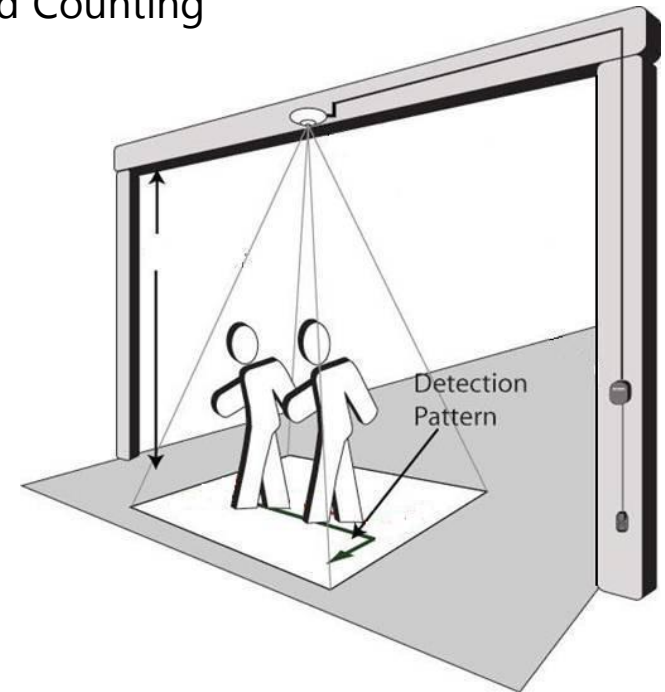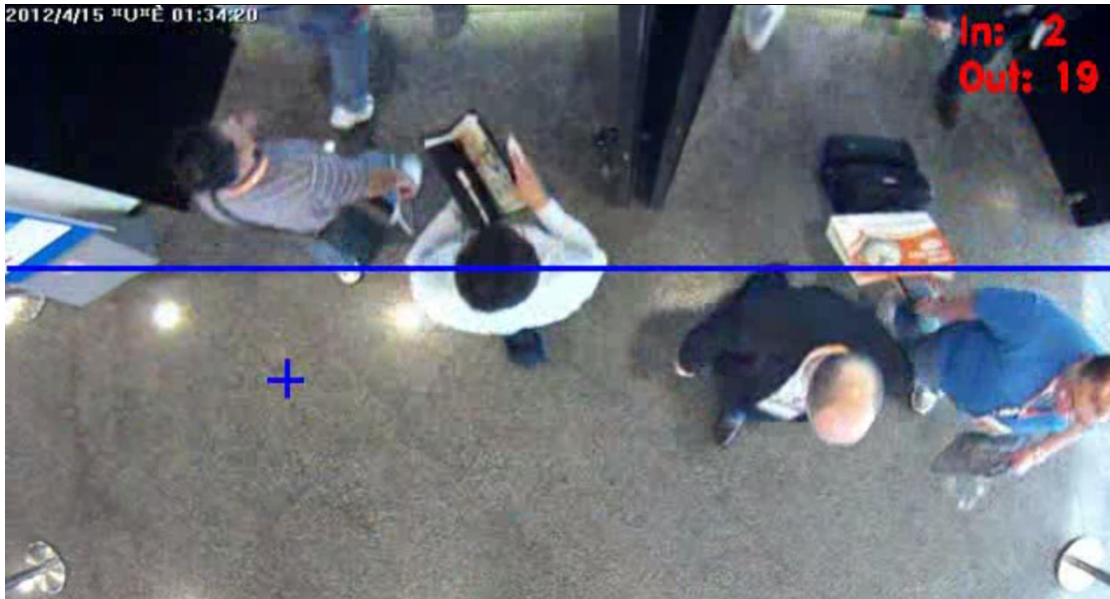
Queue Management

This feature provides queue properties like:

Ingress – count of people coming into queue

Egress – count of people coming out of queue

Waiting time – Waiting time in the queue

Applications:

At service counters like ticket counters, boarding points between platform and carrier.

Ingress: 28
Egress: 21
Waiting time: 7 mins

EXIT

ENTRY
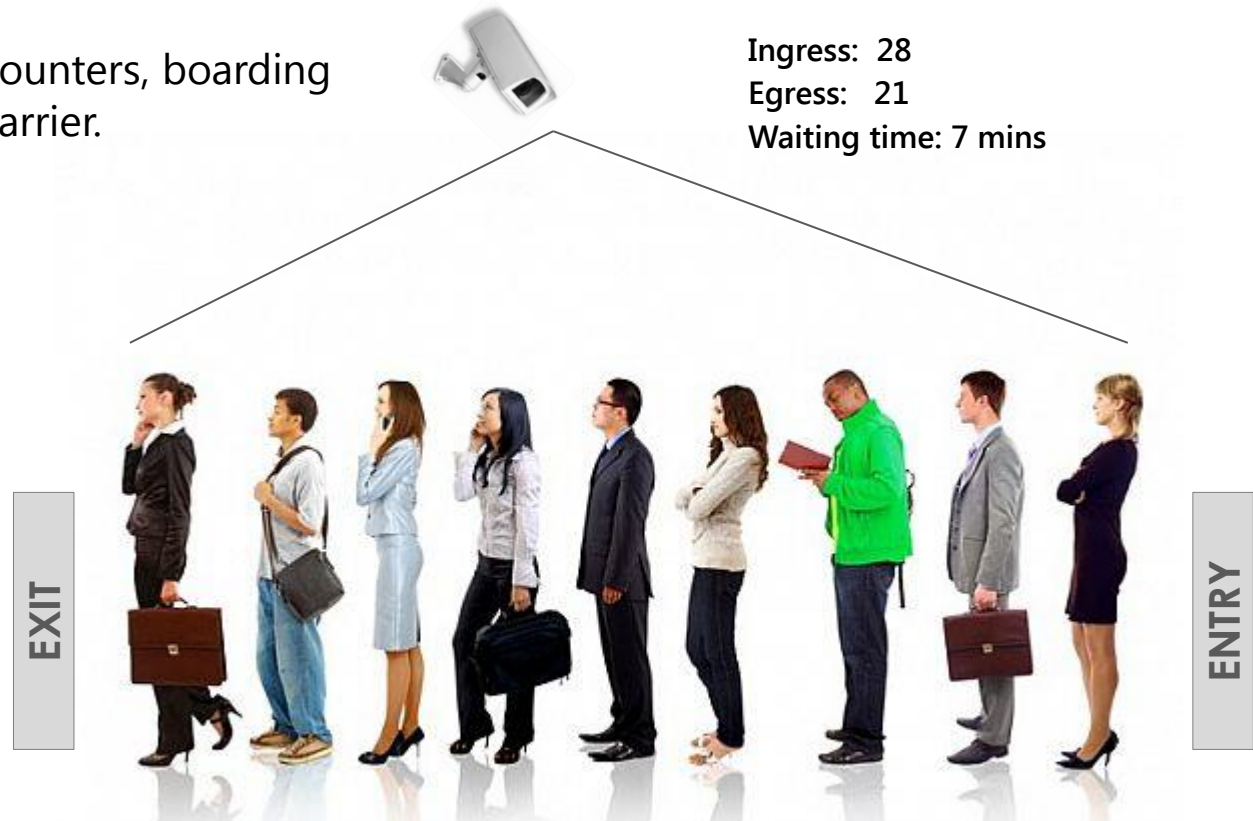
Face Capture & Face Analytics

- **Face Capture:** Detects face in the camera FOV, captures it and stores it

- **Face Tracking:** Tracks the face in camera FOV

- **Face Counting:** Counts the number of faces in the camera view and over a time period

- **Face Presence:** Detects for how much time any face was in the view

- **Face Frequency:** Frequency Distribution Map for recognized people

- **Demographic Analysis:** Age Detection, Gender Detection

Applications:

- Face Capture at service counters like ticket counters, platforms, departure and arrival gates etc.

- Eye ball grabbing data for different shelves in retail stores

- Viewership detection for digital signage, billboards etc.

- Customer Profiling (Age & Gender)

Face Recognition

Face Recognition: Matches the Face detected with the faces in the database and sends alarms.

Alarms: Option to send Alarms (Face Matching/non Matching) to VMS or Alarm Center

Applications:

- VIP identification, Blacklisted people identification
- Face Recognition based touch-free Access Control System
- Installation at entrance/reception areas – Lobby Management

Specifications:

- Supports normal IP cam. (mid to high end)
- Supports database size < 10000
- Distance up to 3 m.
- Camera Height 1.7 m.
- Detection time : 1-2 s
- Face registration per person: 2-10
- Accuracy >80%

Person Name:	David	Person ID:	1
Person Info 1:	David_Faces	Person Info 2:	AllGoVision
Alarm Time:	3/12/2014 12:34:35 PM	Alarm Name:	FACE_RECOGNITION
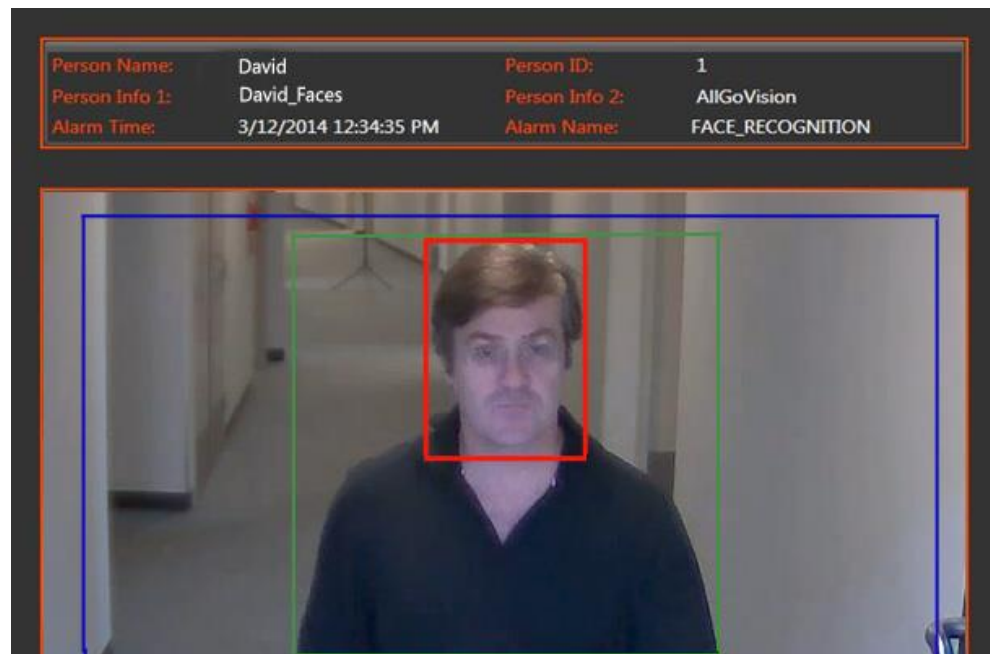
All Features at a Glance

Security	Counting / Flow	Traffic / Parking	Surveillance - Enhanced Monitoring
Trespass	People Counting	Vehicle Wrong Way Detection	Video Stitching with Object Tracking
Line Crossing (Tripwire)	Reporting	Illegal Parking Detection	Video Stabilization
Smart Auto PTZ	Auto Emailer	Congestion Detection	Video Smoke Detection
Tailgating	Loss Prevention Features (Cup Counting)	Vehicle Counting	Video Fire Detection
Camera Tampering	Face Counting	Speeding Detection	Object Masking / Face Masking
Left Object Detection	Queue Management	Parking Management	Face Recognition
Missing Object Detection	Heat Map		
Loitering	Motion Map		
Crowding	Video Summary		
Face Capture			
PTZ Handoff			

AllGoVision GUI

Reports & Analysis

The application supports

- Report of counting with different time duration, interval and plot options.
- Export of plot in JPEG and report CSV format
- Zonal Report with multiple cameras added in each zone
- Auto Report E-mailer
- FTP upload of reports
- Heat map
- Motion map

Motion Map
70% 30%

AllGoVision Alarm Analysis
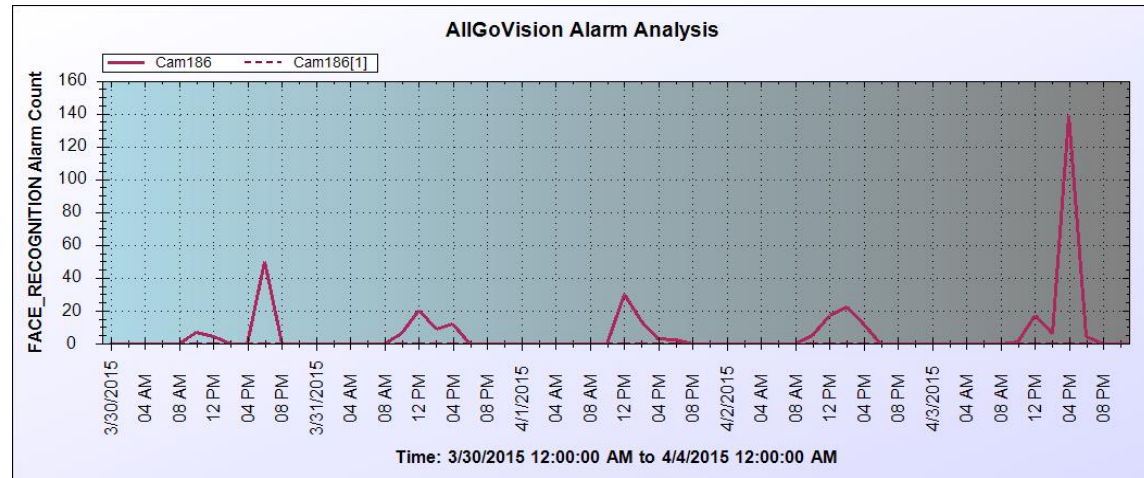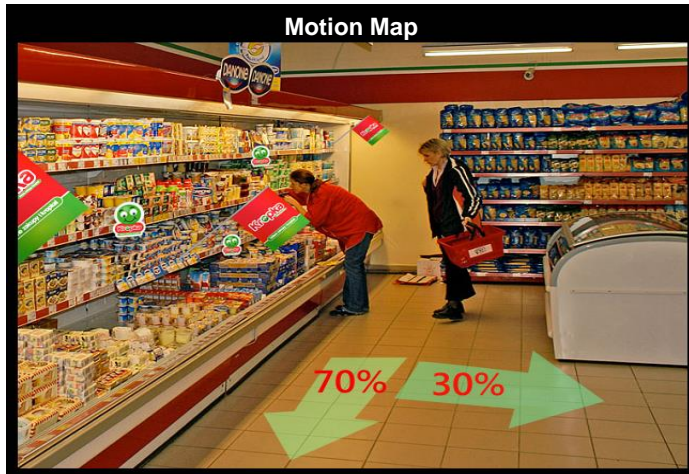
Alarm Center – Management Client

Alarm Center (Alarm Management Client) provides view, search, report & analyze option for all the alarms generated by AllGoVision analytics running on different systems across a LAN.

Alarm Center – Features & Advantages

Features

- Alarm Popup, Alarm Video Playback
- Display alarms with date/time stamp and all properties
- Search: Filters alarms based on alarm/object properties
- Analysis: Heat map and Motion map
- Reports: in PDF, JPG, CSV and Text
- Can schedule reports for Email & FTP
- Thumbnails, Video Summary
- Supports Face Recognition Clients

Advantages

- Provides single viewer with different VMS integration
- Provides more functionality than VMS client for analytic alarms
- Standalone AllGoVision can be used with client
- The Alarm Management Client is available as plugin and can be integrated with VMS client
- Alarms database in MySQL

AllGoVision VMS Integration

- AllGoVision application provides the flexibility in installation. It can be installed either in same machine with VMS or separate machine.

- AllGoVision can take the Video feed directly either from camera or VMS.

- AllGoVision send alarms to VMS Viewer application.

- AllGoVision application can run as a windows service

IP Camera

Open Platform VMS

AllGoVision Analytic Server

AllGoVision Analytics – VMS Integration

Operator
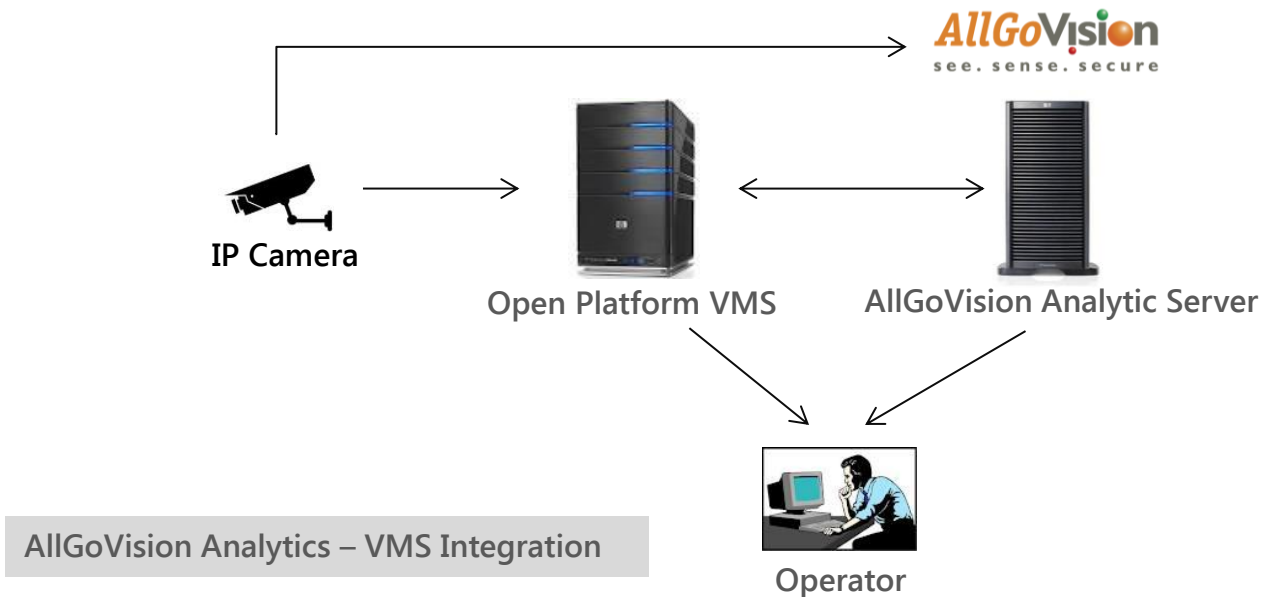
AllGoVision Analytics on the Edge

- AllGoVision application is installed on Edge of an Axis Camera.
- AllGoVision takes the Video feed directly either from camera or VMS.
- AllGoVision send alarms to VMS Viewer (like Smart client) application.
- AllGoVision application can run as a windows service

IP Camera

Analytic Management Client

Open Platform VMS

Operator

AllGoVision Analytics – VMS Integration-Edge
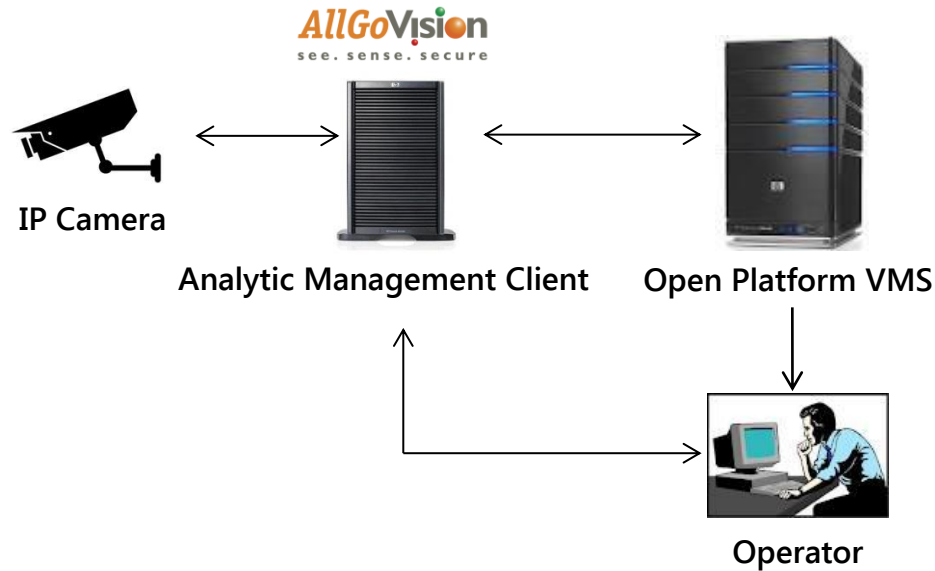
AllGoVision Edge Solution

FEATURES

Intrusion detection

- ✓ Tripwire
- ✓ Trespass
- ✓ Tailgating
- ✓ Camera Tampering

Suspicious Incidences

- ✓ Loitering
- ✓ Crowding
- ✓ Left object detection

Business Intelligence

- ✓ Counting

Traffic/Parking Mgmt.

- ✓ Wrong Way Detection
- ✓ Illegal Parking Detection

Cameras supported: Axis - ARTPEC3 , Ambarella, ARTPEC4 cameras (Ex: M3004, M3005, M3113, M3114, M3203, M3204, M1103, P33 series,P13 series, Q series etc)

VMS Supported: Milestone, Genetec, Axis Camera Station (through Device events), AllGoVision stand alone with viewer

Advantages:
- ✓ Cost effective solution since no server requirement (saving of min 50 USD/channel)
- ✓ The performance close to server grade software

AllGoVision Stand Alone Analytics

- AllGoVision can directly take video feed from the camera

- Alarms are viewed in the Alarm Center

- No integration required, AllGoVision works independently
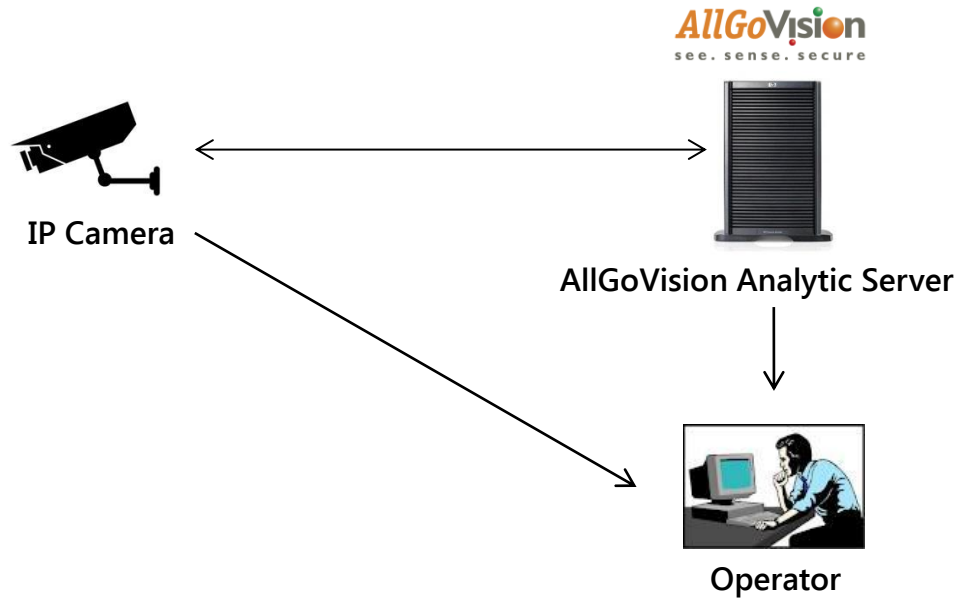
AllGoVision Stand-Alone Analytics

Analytics: Distributed Architecture

- AllGoVision can be run locally (edge or machine) or on cloud
- AllGoVision can send alarm over WAN.
- AllGoVision Alarm Center can be hosted on Cloud

Analytics running on Edge

Analytics running on Machine

Cloud or Central Server

Client
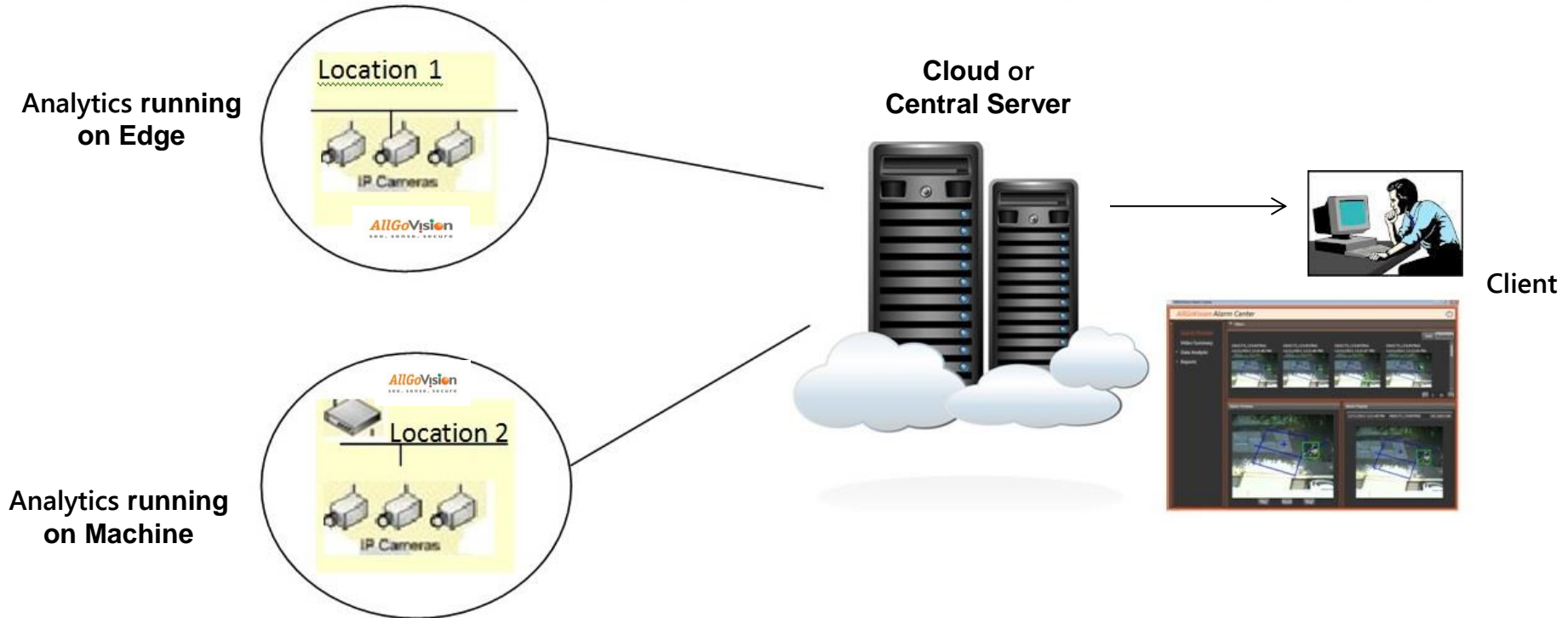
Cloud Integration with VMS

- Example integration showing AllGoVision running on Cloud along with Milestone VMS
- Analytics can send alarms to any application hosted on cloud

Analytics on Edge

Cloud

milestone   AllGoVision
see. sense. secure

XPES	XPES	XPES	XPES
OS	OS	OS	OS
VM1	VM2	VM3	VM4
HYPERVISOR
MEMORY 32GB
1 CPU (4 Core)
Storage 1 TB (subject to be change)
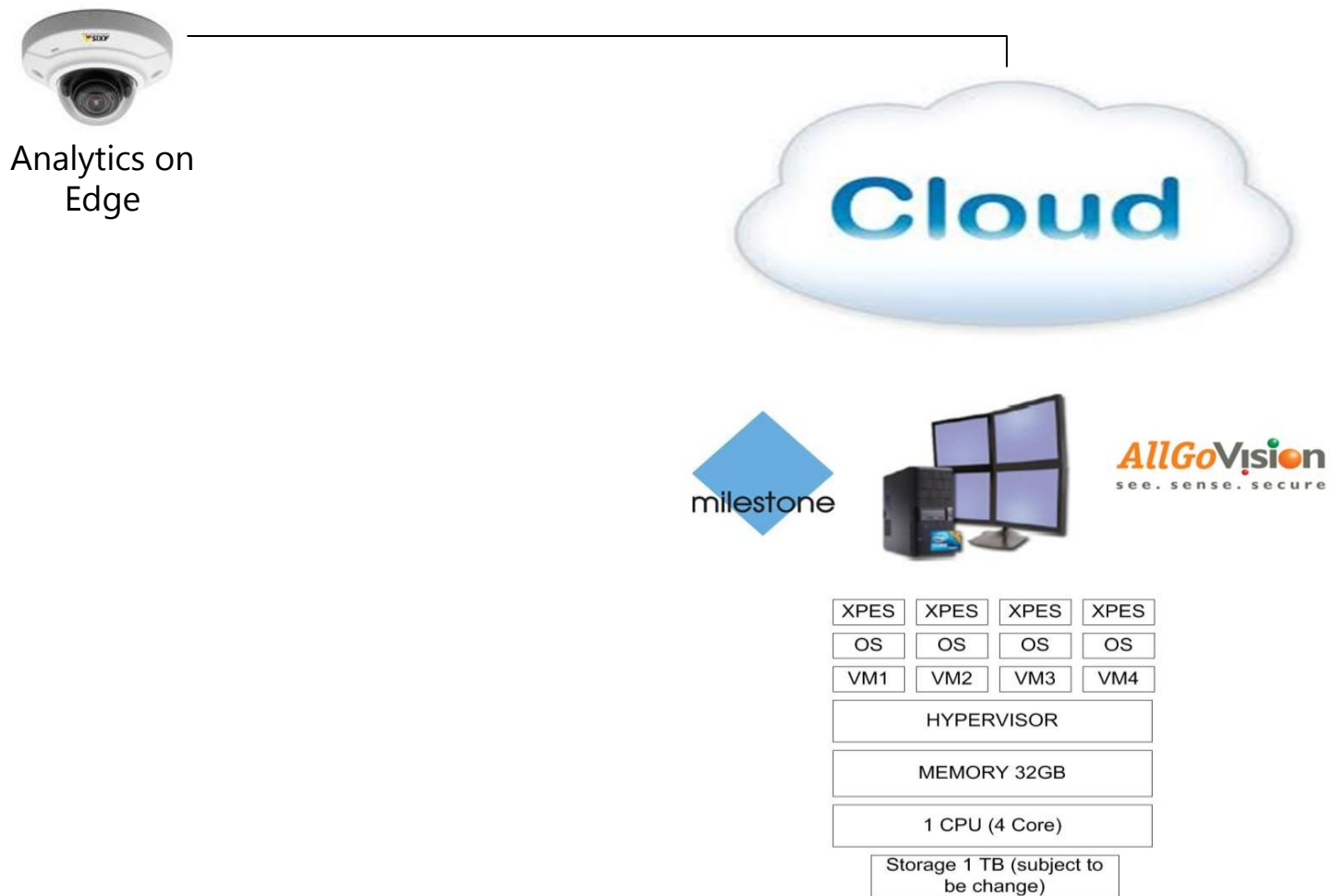
Customized Video Analytics

- **Customize Video Analytic Solution to enhance performance**

  - Specialized player in Customized Video Analytics.
  - The Video Analytic features are customizable for particular project.
    Builds on basic set of algorithms for Analytics. Algorithms are standard.
    Scenarios are different so requires customization.
  - Enhances performance based on the video collected for particular scenario.
    Ensures performance, Enhances acceptability
  - Provide application enhancement like report generation software, different component integration
  - Customize solution development undertaken for India's biggest Organized Retail Restaurant chain and Singapore Government Agency.

  Collect Data → Implement Solution → **Test** → Customize solution
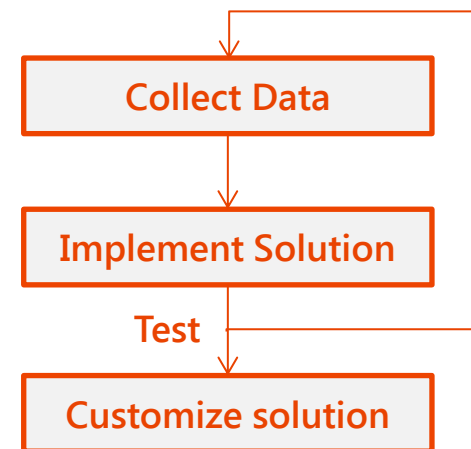
- **Customization Approach**

  - Understand the requirement, Collect the Data from camera
  - Customize solution, Develop application, Fine tune algorithms
  - Test and Validate
  - Implement the Solution
  - Support throughout Product Life Cycle

  Standard Algorithms & Applications → Feature Enhancements → Application Enhancement → New Applications
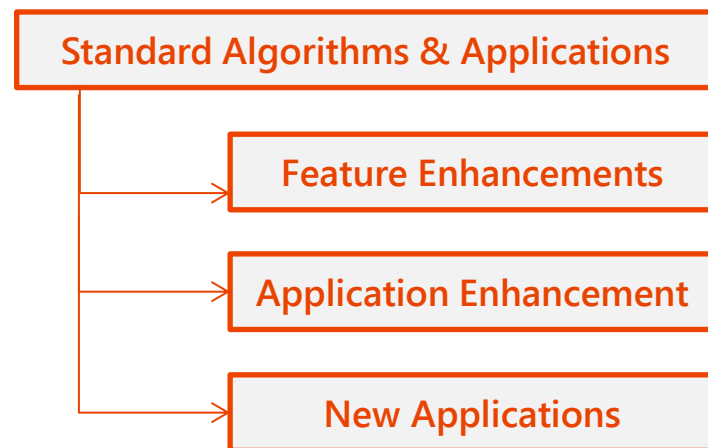
Analytics on different cameras

Analytics on different camera placement

Indoor camera	Entry/Exit Cameras	Pathways	Perimeter cameras
Loitering	People Counting	Vehicle Wrong Way Detection	Tripwire / Trespass
Crowding	Face Capture	Illegal Parking Detection	Auto PTZ
Heat Map	Face Recognition	Congestion Detection	Loitering
Left/Missing object detection	Tailgating	Vehicle Counting	Video Stitching
Video Smoke Detection	Queue Management	Speeding Detection	

Reliable Performance & Accuracy

PTZ / Auto PTZ - Captured in Xiamen surveillance during Typhoon time.

Occlusion

Occlusion Detection

- Outstanding **Advanced** Object Tracking Algorithms
- Superior **Robustness** to Environmental Changes (wind/rain/snow)
- Industry best **Object Occlusion Handling**
- **Accurate** Results even at gradual & sudden Illumination Changes
- Object **tracking** in crowd
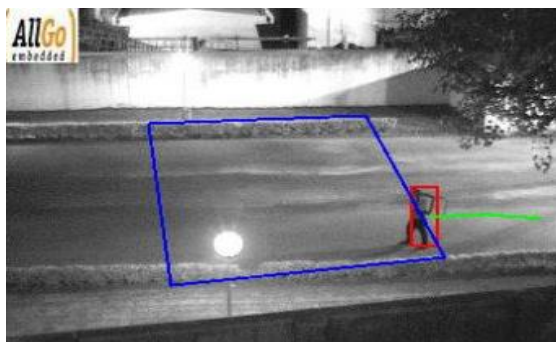
Reliable Performance even during Night & Rain conditions

Occlusion

Occlusion Detection

Case study: Security

- **Place:** Hong Kong International Airport for APM trains
- **SI :** PCCW & Securex
- **Solution:** AllGoVision + Milestone + Axis cameras
- **Total cameras:** 120.
- **Features:** Unattended Object and Unauthorized people.
  Prevented Human trafficking and smuggling
- **Use case:** Above features detection with >99% detection and < 1% false positives

Case Study: Traffic Surveillance

- **Use case:** Illegal parking and Face masking (Privacy masking) with LTA, Singapore
- **Cameras:** Axis/ Sony,   **Number of cameras:** 248   **VMS:** Milestone
- Detects illegal parking in residential areas and protects privacy of people

Case Study: Business Intelligence

- **Use case:** People counting at the entrance of retail chain in a Mall, Kualalampur
- **Cameras :** Axis, 70 Nos. Cameras
- **Reporting:** AllGoVision provides report, store entry and exit, total Foot Fall detection
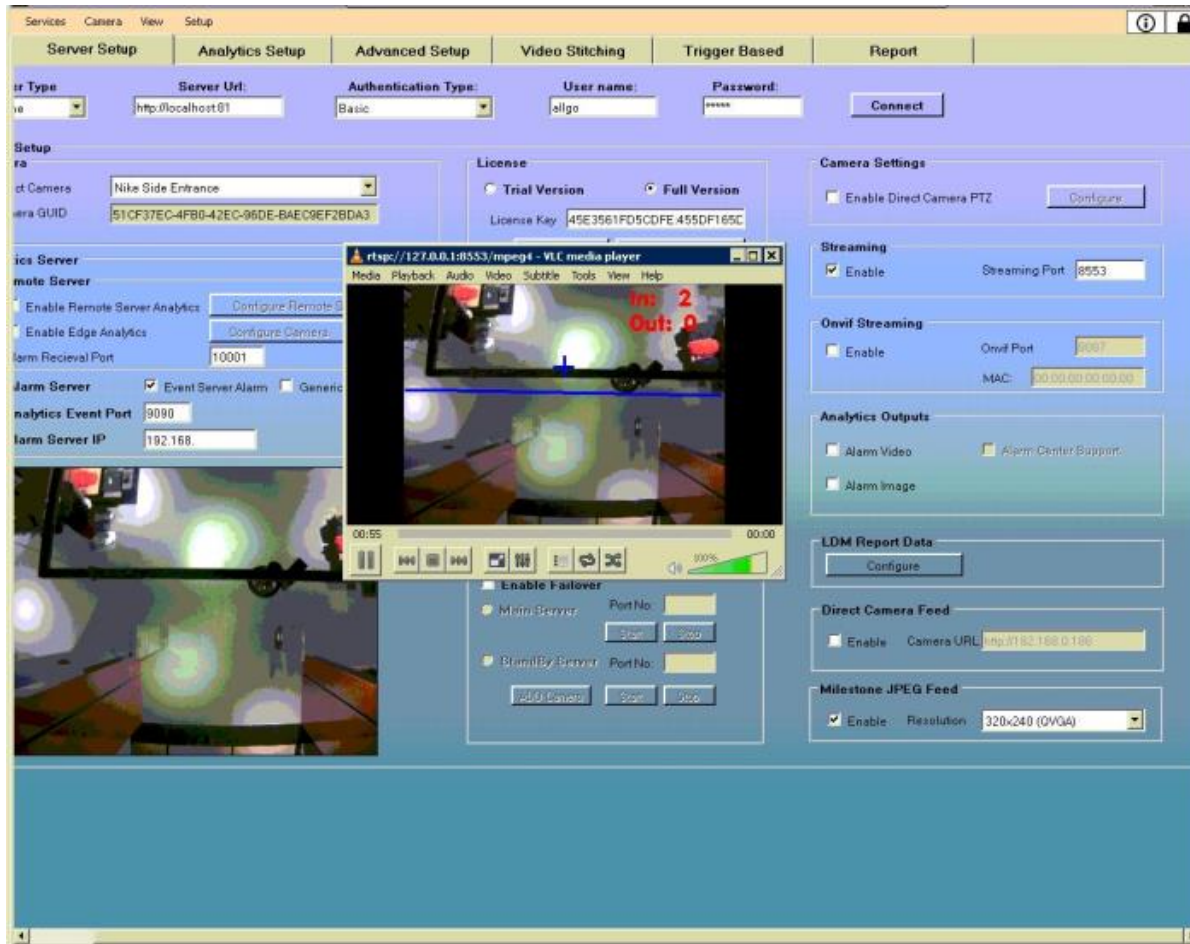
Case Study: Customized Analytics

- **Use case:** Table cleanliness and Hygiene detection for NEA, Singapore
- Detects if table is cleaned within 2 mins and bird detection
- Implemented in Geylang Serai food court
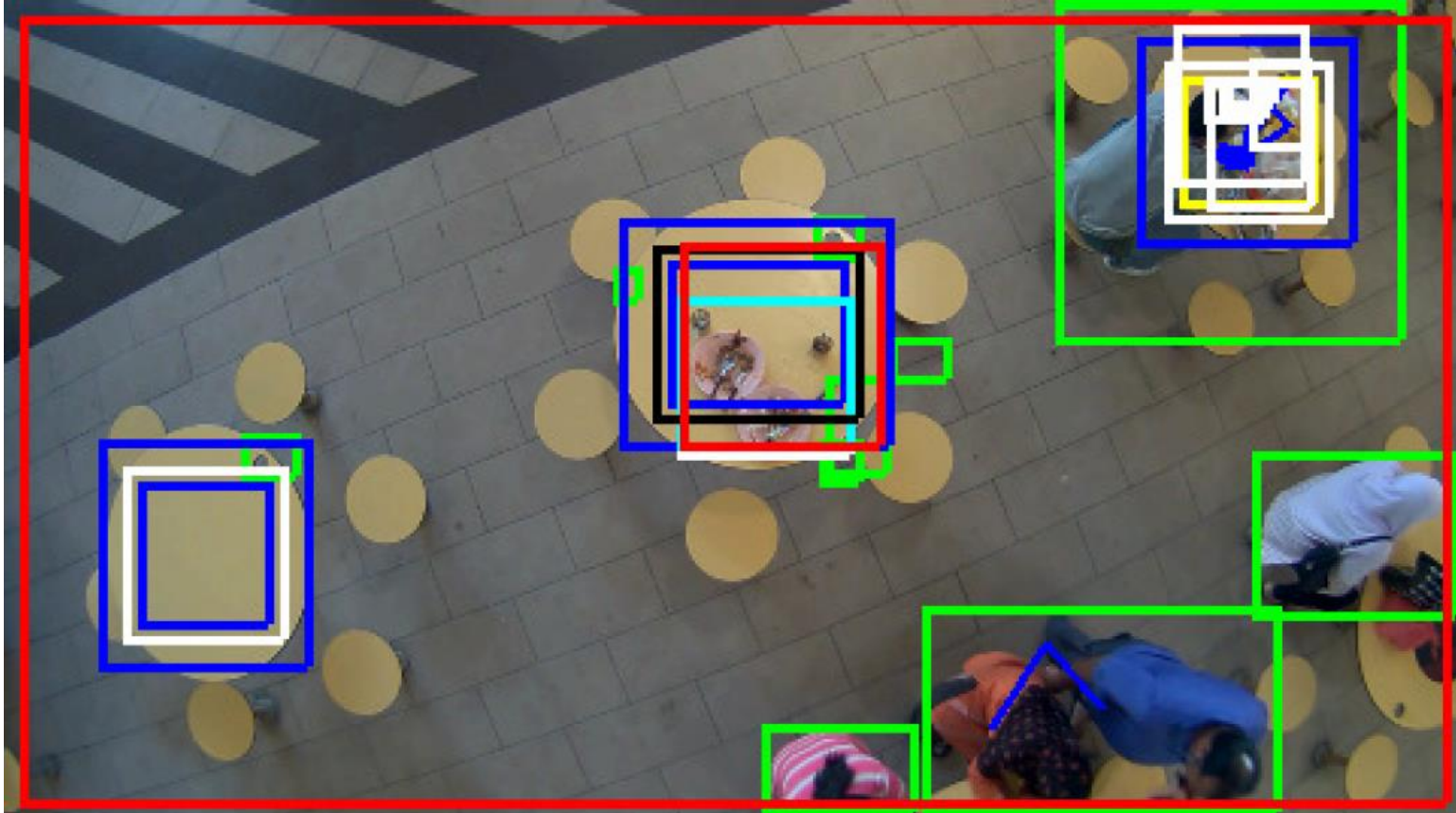
Detailed Case Study – CCD

- Cup Counting Software for Café Coffee Day (Starbucks of India)
- Very challenging use case with unrestricted movement of cups
- Axis Camera, Milestone X-Protect VMS and AllGoVision VCA
- Use case : Beverage counting for pilferage reduction
- Achieved 95% + accuracy

Cup Counting Setup

Detailed Case Study – CCD

Solution Features

- Counts all cups, glass, bowls

  - Cappuccino

  - Other hot beverages

  - Cold beverages

  - Ice creams

- Tracks the cups coming in and going out

  - Tracks multiple cups together, different kinds of movement

- Reports are generated and exported in JPEG and CSV format and sent daily.

- The count tallied with POS counting.
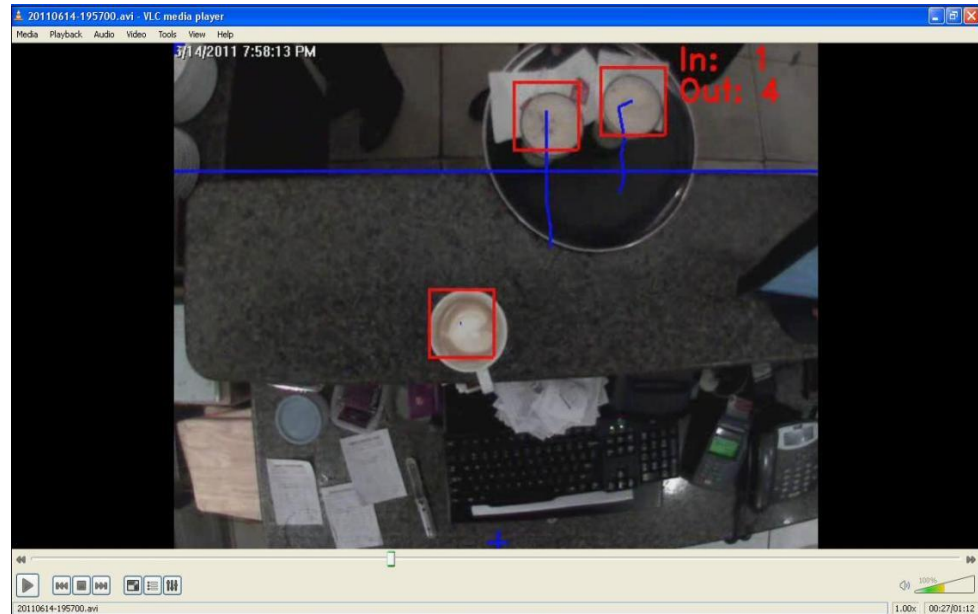
Detailed Case Study – CCD

Benefits

- Reduced Pilferage by 5%

- Increased bottom line
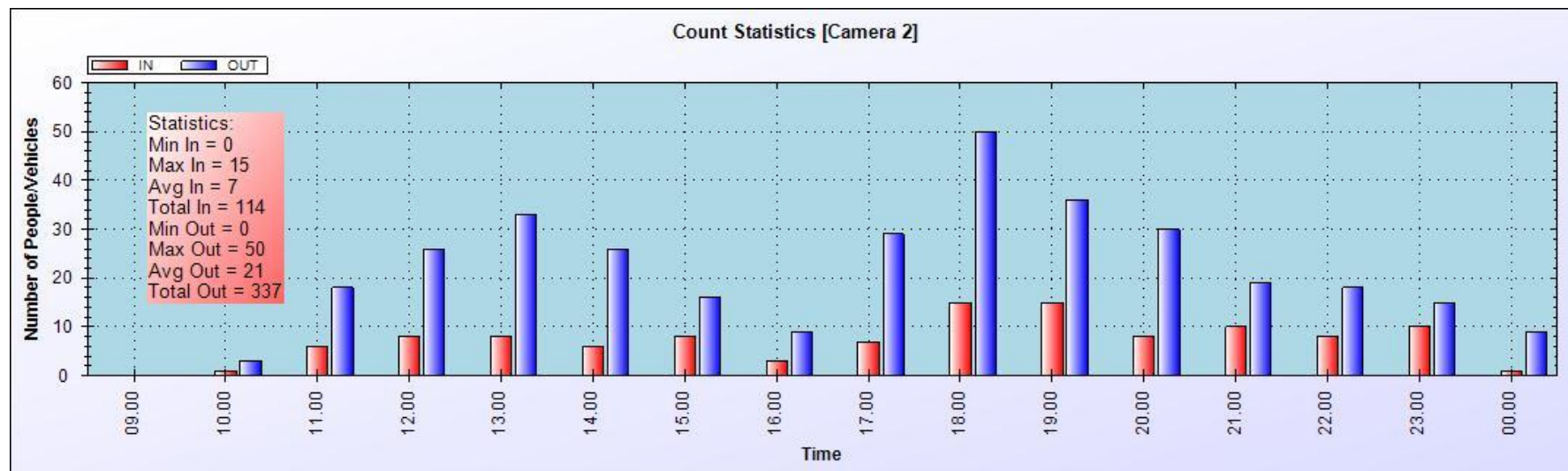
References

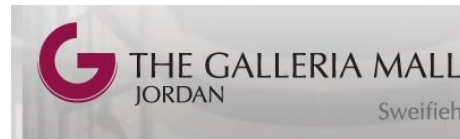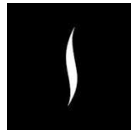# Some of Our Installations

Transportation

Delhi Aerocity & IGI Airport ● Hong Kong Int. Airport ● Indian Railways ● Keretapi Tanah Melayu Berhad ● CONCOR India

City / Traffic Surveillance

Singapore Traffic Surveillance ● Qatar City Surveillance ● Lavasa Township ● Turkey Traffic Surveillance ● Bandra Worli Sea Link, Mumbai

Power, Oil & Gas

Bharat Oman Refineries ● Indian PSUs (GAIL, HPCL, IOCL, ONGC, BHEL, NTPC) ● Khazzan Oil & Gas - Oman ● Tata Power

Critical Infrastructure

Baroda Museum ● Macau Tower ● Mysore Palace ● Sabarmati Jail ● Somnath Temple ● Meenakshi Temple ● Currency Note Printing Press

Education

Changzhou University ● Symbiosis International University ● IITM – Pune, Noida

Retail

The Galleria Mall Jordan ● Culture Kings – Australia ● Abu Dhabi Mall ● Mall, South Africa ● Forum Mall, Hyderabad, ● 7-Eleven Stores ● Café Coffee Day ● Sephora Retail, Kualalumpur ● National Environment Agency, Food courts - Singapore

Government, Police, Defence

Indian Air Force ● Abu Dhabi Police ● Ministry of Interior, Abu Dhabi ● Indira Gandhi Centre for Atomic Research ● Indian Navy ● Customs Office, Vietnam

Banking, Finance & Industries

GIFT City – Gujarat ● JSW Steel ● Reserve Bank of India ● ACC Limited ● State Bank of India ● Deepak Fertilisers & Petro Chemicals

Our Technology Partners

Our Channel Partners

About Us

AllGo Embedded Systems – *Makers of AllGoVision*

Incorporated in 2005, AllGo is a leading product design company with its solutions deployed in numerous fields in Security, Video Intelligence, Automotive and Consumer Multimedia segments. We license our Multimedia / Smartphone Connectivity software, ADAS solutions and Multimedia Codecs to automotive customers worldwide. Our production proven media & connectivity middleware, along with our BSP development and system integration capabilities, make us a one-stop provider for high quality infotainment solutions. Our enterprise grade advanced video analytics solution AllGoVision is proven with world-wide installations in video surveillance markets. AllGo has offices in India, USA, UAE with sales and support across the globe.

Key Milestones / Achievements

- Digital Audio Players used by 8 leading car manufacturers in USA and Germany
- World's fastest and best quality MP3 Encoder for ARM platforms
- World's first fully programmable 1080p H.264 Decoder
- Video and Networked Audio IP - licensed to companies around the world
- BOM optimized Turn-Key Solution for Streaming Video Player
- Solutions for 50+ products, deployed in 7Million+ cars/systems world-wide
- Comprehensive Video Analytics Solution for Security and Business Intelligence

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