



Datasheet

License Plate Recognition + Red Light Violation Detection



Version 3.8

This Specification Sheet gives the details of system requirements, features and other salient points of AllGoVision License Plate Detection and Recognition & RLVD.

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INTRODUCTION

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

LICENSE PLATE RECOGNITION (LPR) + RED LIGHT VIOLATION DETECTION (RLVD)

This Specification sheet gives the details of system requirements, descriptions and salient points for features based on AllGoVision's License Plate Detection & Recognition, and Red Light Violation Applications.

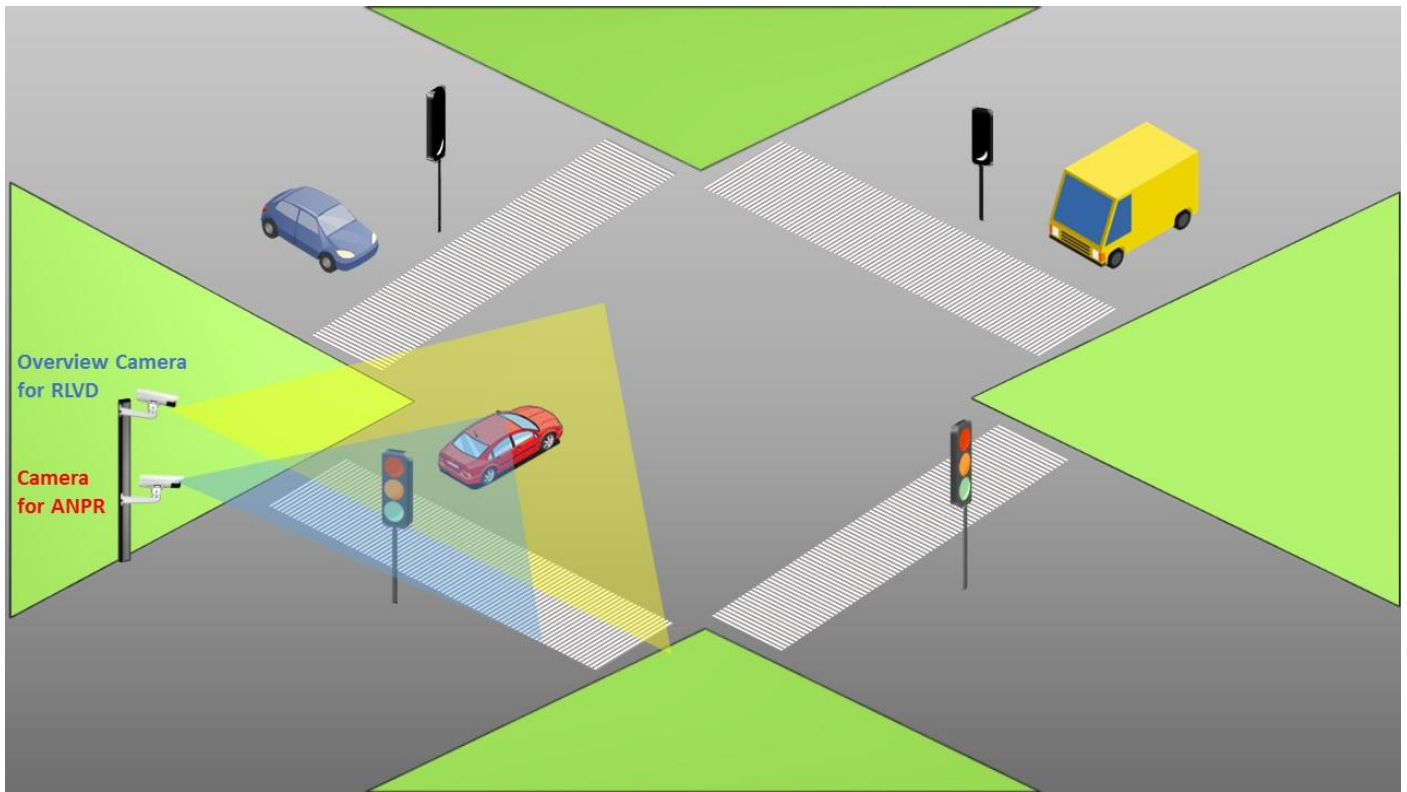
SYSTEM REQUIREMENT

AllGoVision analytics has the following system hardware & software requirements for LPR.

CATEGORY	REQUIREMENT
Operating System	Workstation: Windows 7, 8, 10 Server: Windows Server
Hardware Configuration	Server Requirement: Core i7, 12 GB RAM, 1 TB HDD, Windows 7/8 for up to 4 cameras Alarm Center (Client): Core i7, 12 GB RAM, 1 TB HDD Windows 7/8 Quad-core Intel Core i7, (3.5GHz), 2xHDD, 8GB (2X4GB) for every junction
Network	Ethernet, 100 Mbit or higher recommended.
Hard Disk Space	50 GB for 1 week storage for alarm files (images & videos)
Database	My SQL 5.5.2
Resolution & Frame Rate	640x480 and above up to 1080p. Frame rate: 20 fps and above
Recommended Camera	Models from Axis, Pelco, Bosch, Sony, Honeywell, IQinvision, Hikvision, Dahua, Panasonic, Brickcom, Indigovision, Cisco, Samsung, Acti, Digital Watchdog, and others (ONVIF Cameras).
VMS Integration	Milestone, Genetec, Indigovision, Exacqvision, Cisco, Honeywell, Digital Watchdog, WaveStore. Verint, Bosch

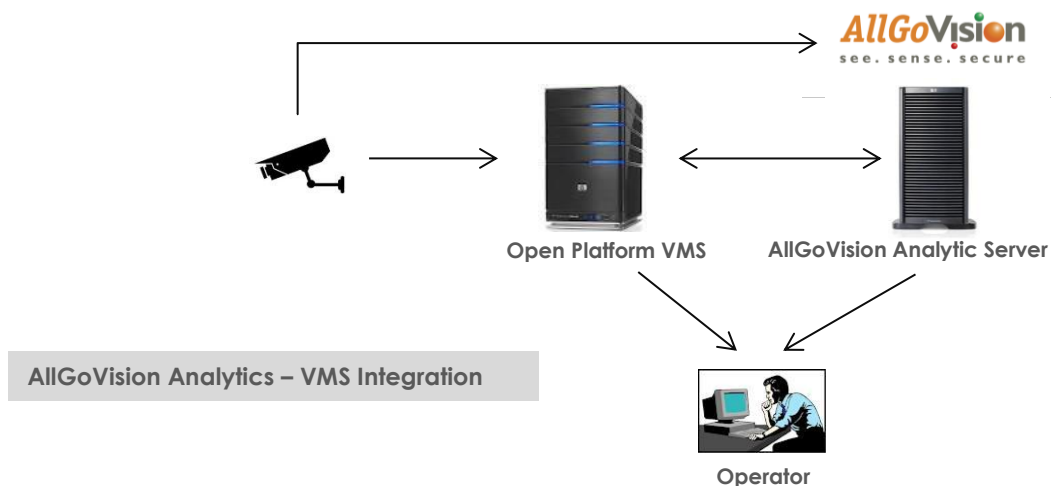
INSTALLATION SCENARIO

There are 2 Cameras required for every Traffic Signal. The overhead camera detects the violation of red light by vehicles and the ANPR camera detects and recognises the number plates of those vehicles.

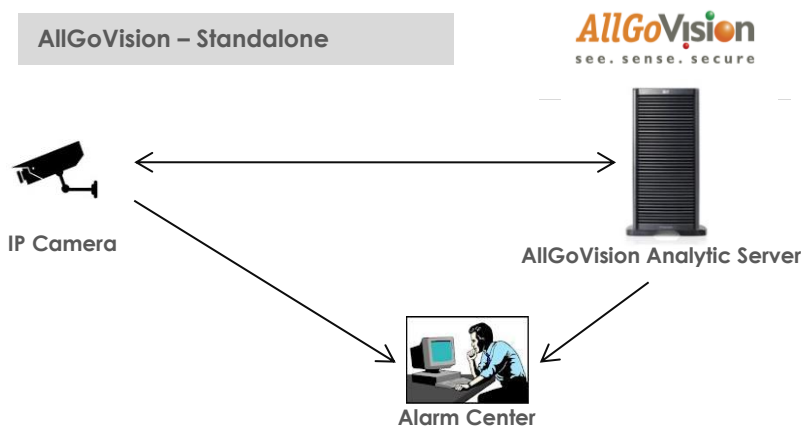


ARCHITECTURE

A simple architecture with VMS is shown below. The video from the CCTV camera is stitched by AllGoVision video analytics server. The alarms can be viewed in the viewer. The occupancy levels are shown in Alarm Center.

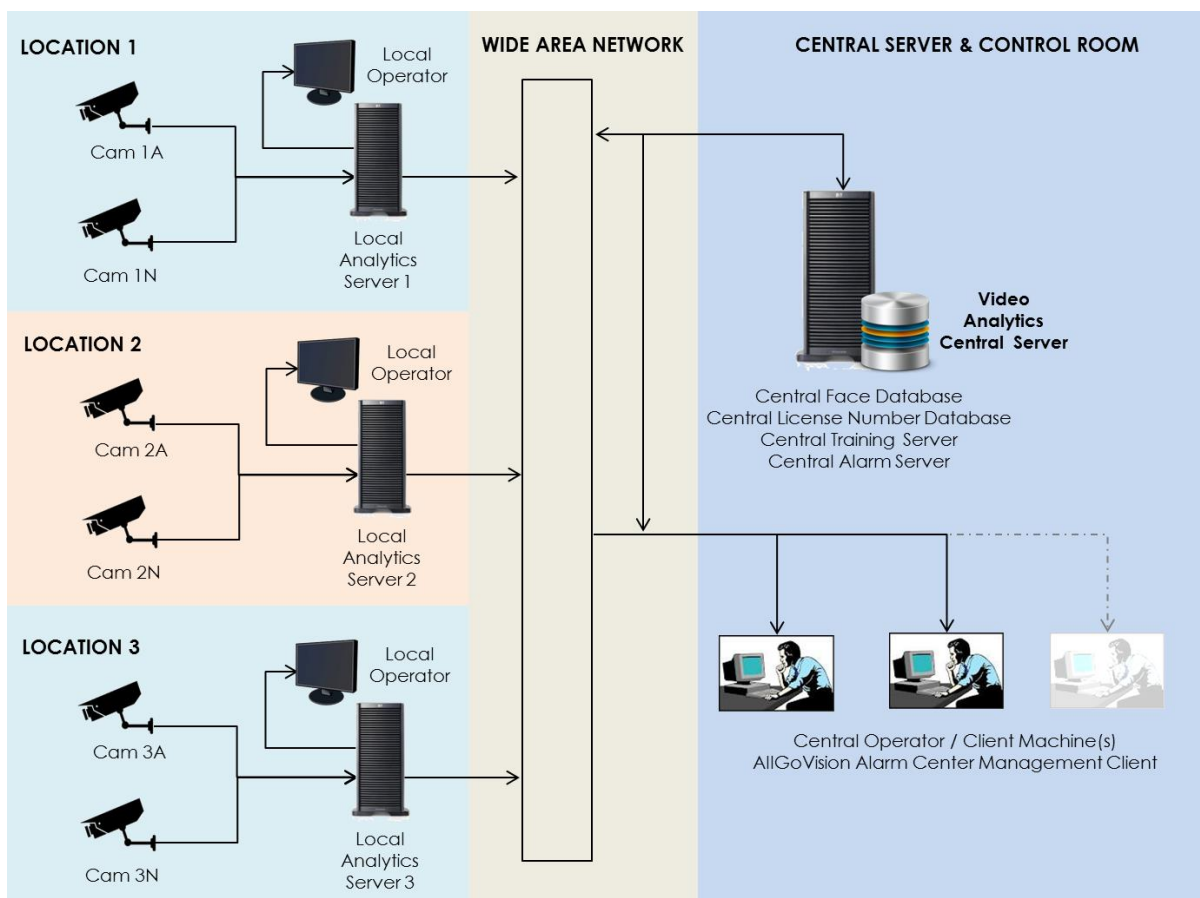


Standalone application works independent of VMS. It directly takes the video feed from camera. The alarms and information are seen in Alarm Center (management client).



Federated Architecture

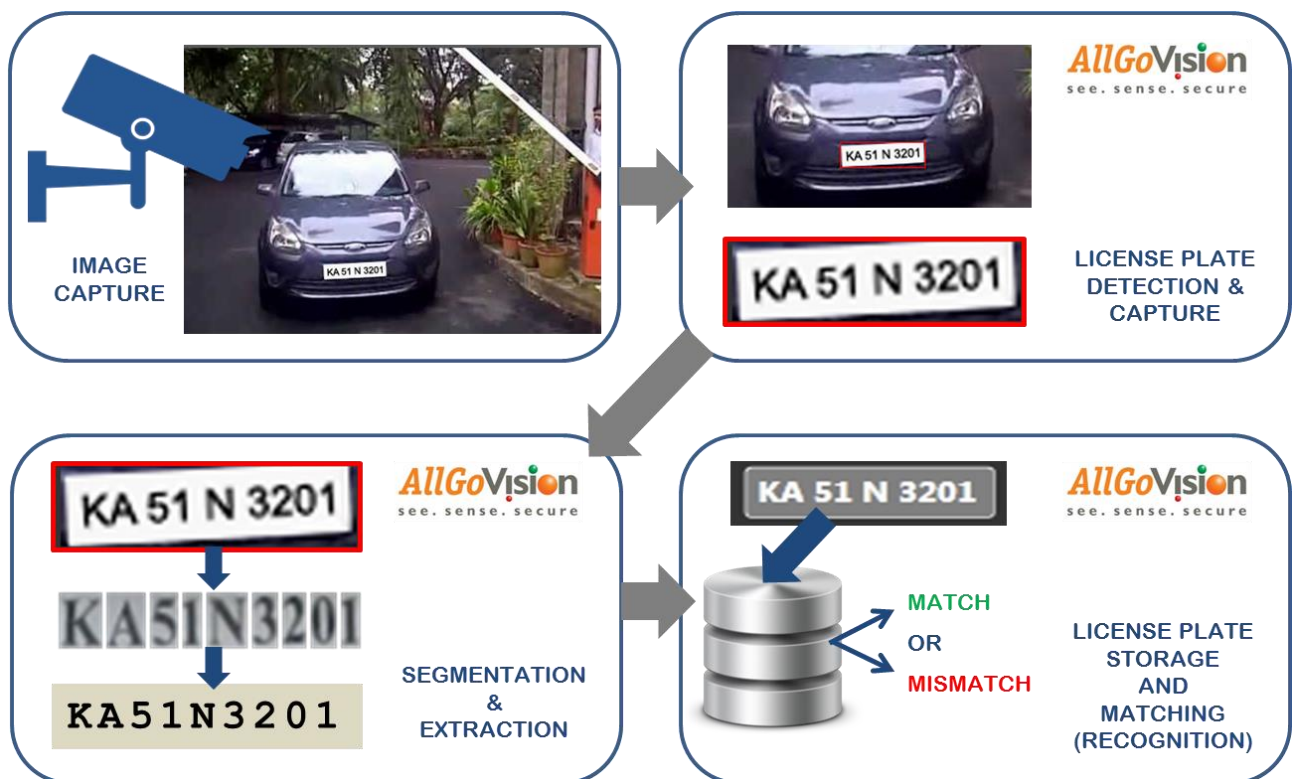
- With Federated Architecture, analytics can be done at local servers and viewed by local operators.
- A central server with a central operator can view all the alarms in the system.
- Alarms from different clients can be seen at the central Alarm Center and alarms are differentiated through Client IDs.



LPR – HOW IT WORKS

The video feed coming from IP camera is processed frame by frame for detection and recognition of license plate which has 3 steps involved in the process.

- In the step 1, the clear image captured by the camera is processed for presence of any vehicle license plate. On successful detection of license plate the detected license plate is captured. This step is known as License Plate Detection (& Capture).
- In the step 2, the captured license plate image is segmented into optically recognized characters and the alpha numeric value is extracted.
- In the step 3, the license plate identity (the alpha-numeric code) is stored in the database. The user has options to manually examine the code and modify if required. There is option for the matching the extracted code with the existing entries in a list of registered license plates. Depending upon match or mismatch the license plate is recognized or unrecognized with respect to registered database.



LPR+RLVD FEATURES & PERFORMANCE

- Very Good Accuracy with Low False Positives.
- Reliable performance.
- Supports Multi-Country Recognition based on standards formats of specific countries.
- Real time Detection and Recognition process for Vehicle License Plates.
- Only Roman characters are supported.
- Black list / White list configuration supported.
- Supports Capture of License plate along with the Car Image.
- Supports Capture of License plate along with the Driver Image.
- Static Plate Detection: Allows Detection/ Recognition for Stationary Vehicles also.
- Speedup Factor: Compresses the analytics window to a lower resolution to improve the processing speed.
- Time out: If a vehicle enters a monitored zone, and doesn't exit within a specified time limit, an alarm can be generated.
- Detects ingress without egress and sends alarm on timeout after ingress without egress.
- Detects and sends alarm for egress without ingress.
- Sends daily reports of ingress in PDF.
- Database is MySQL.
- The format of the number plates should be standard and they should not be blurred.
- The feature can be integrated with E-Challan System and all violations can be printed. The min frame rate should be 20 fps and the video quality should be good and the recommended server specs should be used.
- The minimum character resolution for ANPR is 24 pixels X 16 pixels.

SOFTWARE FEATURE

AllGoVision product offers a graphical user interface with windows-oriented, tab based, point and pick interface. Extensive use of graphical icons, pull-down menus, buttons, check boxes, and radio-buttons are incorporated to reduce typing work to the minimum possible extent.

- Application can run as a service
- Easy to use Configuration Application
- Settings are available for Direct Camera connection
- Settings are available to send alarms to supported VMS clients and Alarm Center.
- Scheduler available to enable scheduling of Video Analytics
- It has its own viewer application, extensive reporting and analysis options.
- Alarm Popup for latest alarm, Alarm Preview for any of the past alarms.
- Video Playback option for Alarms.

- Displays alarms with date and time stamp
- Search: Filters to search alarms based on its types and properties
- Extensive Reporting Options with tables and charts in various formats (PDF, CSV, JPG).
- Options for Report Scheduler, Auto Report E-mailer or FTP upload are available.
- Print and export of license plate data

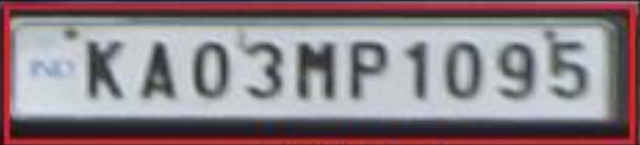

The screenshot displays the AllGoVision Alarm Center interface. On the left, the 'Alarm Details' section shows information for a specific alarm: License Plate 'KA 05 AG 6594', Time Stamp '30 May, 2017 (12:26:49 PM)', Camera 'Axis_49 PTZ ANPR', Vehicle Type/Model 'Car', and Category 'UNKNOWN_LIST'. Below this is an 'Alarm Preview' video showing a white car with the license plate 'KA 05 AG 6594' highlighted in a red box. The speed is shown as '0 km/hr'. On the right, a table lists 1343 total alarms. The table has columns for License Plate, License Plate No., Category, Color, Time, IN/OUT, and Camera Name. The first few rows of the table are as follows:

License Plate	License Plate No.	Category	Color	Time	IN/OUT	Camera Name
	KA 03 NA 3851		■	5/30/2017 12:26:18 PM		Axis_49 PTZ
	KA 03 IA 3851		■	5/30/2017 12:26:17 PM		Axis_49 PTZ
	AO 1 HH 1260		■	5/30/2017 12:25:53 PM		Axis_49 PTZ
	KA 01 HH 1260		■	5/30/2017 12:25:53 PM		Axis_49 PTZ
	L 2 C 9877		■	5/30/2017 12:25:43 PM		Axis_49 PTZ
	252787 J		■	5/30/2017 12:25:39 PM		Axis_49 PTZ
	R 252787		■	5/30/2017 12:25:39 PM		Axis_49 PTZ
	KA 252787		■	5/30/2017 12:25:38 PM		Axis_49 PTZ
	KA 05 MD 6317		■	5/30/2017 12:23:50 PM		Axis_49 PTZ
	KA 03 EA 6484		■	5/30/2017 12:23:02 PM		Axis_49 PTZ
	KA 03 IT 3208		■	5/30/2017 12:22:29 PM		Axis_49 PTZ
	KA 04 JE 4514		■	5/30/2017 12:22:15 PM		Axis_49 PTZ
	KA 04 JE 451		■	5/30/2017 12:22:15 PM		Axis_49 PTZ
	KA 53 P 11 O		■	5/30/2017 12:21:38 PM		Axis_49 PTZ
	KA 53 P 1104		■	5/30/2017 12:21:38 PM		Axis_49 PTZ

AllGoVision Alarm Center – License Plate Recognition Alarm



AllGoVision License Plate Recognition

License Plate Image:	
License Plate Number:	KA 03 MP 1095
TimeStamp:	10/29/2015 11:00:48 AM
Camera Name:	Axis Camera (192.168.0.186)Camera1
Driver Photo:	



License Plate Recognition Sample Report with License Plate Image, Driver Image, Alarm Image.