



Datasheet

License Plate Recognition



Version 3.78

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

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Contents

COPYRIGHT INFORMATION	2
INTRODUCTION	3
LICENSE PLATE RECOGNITION (LPR)	3
SYSTEM REQUIREMENT	3
INSTALLATION & CAMERA REQUIREMENT	4
ARCHITECTURE	4
Federated Architecture	5
LPR – HOW IT WORKS.....	5
LPR FEATURES & PERFORMANCE	7
LPR APPLICATIONS	7
SOFTWARE FEATURE	8

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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)

This Specification sheet gives the details of system requirements, descriptions and salient points for features based on AllGoVision's License Plate Detection & Recognition applications. In other terminologies, the video analytics feature is also known as Automatic License Plate Recognition (ALPR) or Automatic Number Plate Recognition (ANPR).

The product analyses rapidly the video data on the principle of image processing to detect license plates (or number plates) of vehicles and extracts the alpha numeric data to recognize and store the vehicle license plate identity. Alarm Center – the management client for AllGoVision Video Analytics displays the License Plate Data, apart from providing extensive search, reporting and analysis options.

SYSTEM REQUIREMENT

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

CATEGORY	REQUIREMENT
Operating System	Window 7, 8, 10
Hardware Configuration	Server Requirement: i7 5930 6 core, 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
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: 15 fps and above
Stand Alone Version Camera support	Models from Axis, Pelco, Bosch, Sony, Honeywell, IQinvision, Hikvision, Dahua, ISD, Panasonic, Brickcom, Verint, ArecontVision, Indigovision, Cisco, Samsung, Acti, Vision, Digital Watchdog.
VMS Integration	VMS Integration option can be provided.

INSTALLATION & CAMERA REQUIREMENT

- The software is easy to install and simple to use with intuitive GUI.
- The AllGoVision solution can supports Automatic License Plate Detection and Recognition for vehicles facing / moving towards the camera.
- The camera focus has to be adjusted such that the license plate should cover at least 15-20% of camera field of view.
- Camera should be of good quality with high shutter speed. Full HD, 120 DB WDR, 30 fps Frame rate (Ex: Q1615, SNB 6004) is required.
- Illumination should be Min 200 Lux. Night IR illuminator is required.
- Optional: For driver image along with captured license plate image, another angular camera should be installed at a height of 5-6 feet, focussing on the position where driver face would typically appear. Illumination should be Min. 200 lux for the face detection.

Typical camera installation should be as shown in the following figure:

Cam (1)

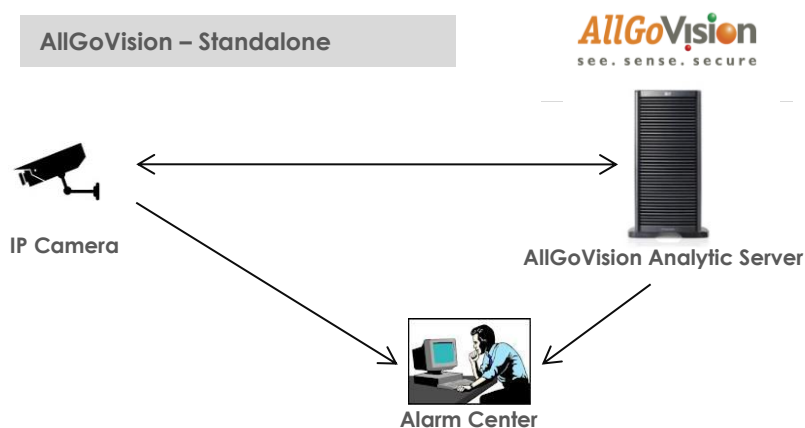
For License Plate Detection & Recognition

Cam (2)

For Face Detection & Capture (Optional)



ARCHITECTURE

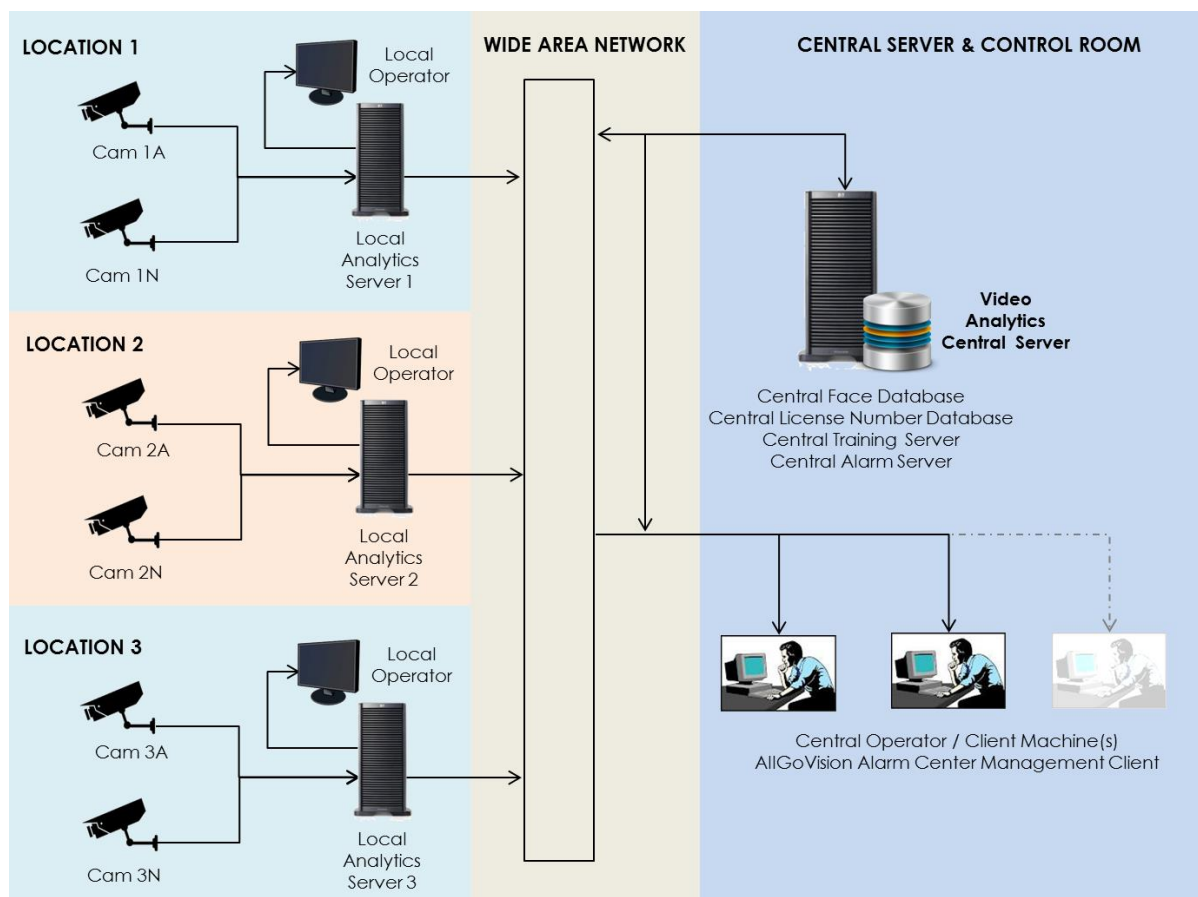


- It is a standalone application. It works independent of VMS.
- Directly takes the video feed from camera.
- The alarms and information are seen in Alarm Center (management client).

Note: AllGoVision application is based on Open Platform Standards and option can be provided for LPR application to be integrated with VMS.

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.

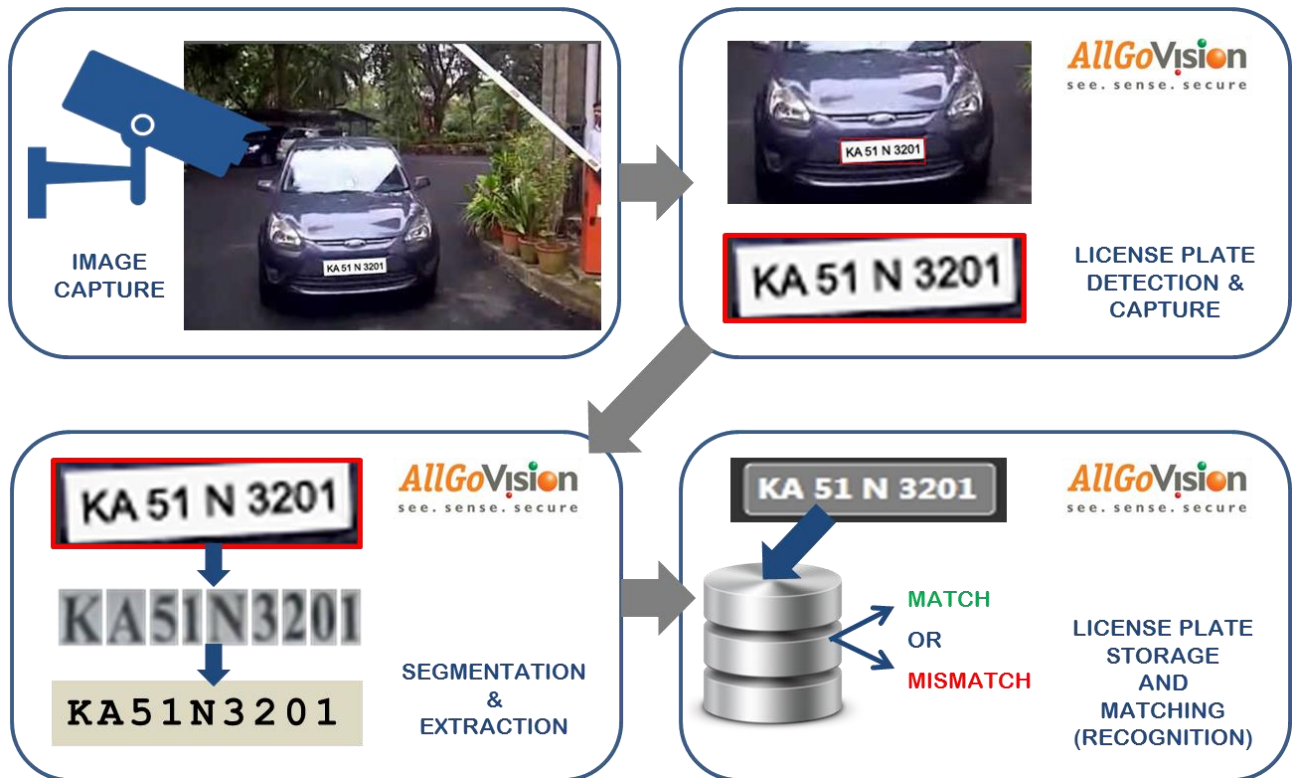


LPR – HOW IT WORKS

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 FEATURES & PERFORMANCE

- 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.

LPR APPLICATIONS

- **Parking Management:** For vehicles which has ingress into the parking area but even after timeout there is no egress, alarms are generated for detection of such vehicles.
- **Traffic Monitoring:** red light violation or any other traffic rule violation can be detected and associated rule-breaching vehicle's license number can be recognized.
- **Law Enforcement:** Stolen cars can be detected from IP cameras deployed in traffic surveillance system in the city / highway. Even the place of registration can be tracked for the detected and recognized license plates.
- **Task Automation*:** Based on a matched entry of recognized license plate associated systems can be triggered such as access control / boom barriers etc. to open for a white listed vehicle at Entry and Exits of restricted zones, parking lots etc.
- **Automatic Toll Management*:** Recognized vehicles being charged the toll fees by associated payment systems for car owners with the specific license number.

*Integration required with the associated systems.



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 is a navigation menu with options like Alarm View/Search, Live View, Data Analysis, Reports, Feature Client, Face Detection, License Plate Recognition, Parking Management, Face Recognition, and Tag And Track. The main area is divided into several sections:

- Alarm Details:** A form showing the detected license plate information:

License Plate:	KA 51 N 3201
License Plate No:	KA 51 N 3201
Time Stamp:	03 August 2015
Location:	ParkingArea_Exit

 Below the form are 'Print' and 'Update' buttons.
- Alarm List:** A table listing recent alarms:

ID	TimeStamp	AlarmName	AlarmDescri	CameraName	S
107	8/3/2015 3:08:37 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
108	8/3/2015 3:09:51 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
109	8/3/2015 3:09:53 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
106	8/3/2015 3:08:36 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
102	8/3/2015 3:07:51 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
104	8/3/2015 3:07:53 PM	LICENSE_PLATE_DETECT	LICENSE_PLA	ParkingAreaExit	E
- Alarm Preview:** A video player showing a blue car with license plate KA 51 N 3201 at a parking exit. The video is currently paused.
- Live Video:** A real-time video feed from camera 'ExitCam186' showing the same blue car at the exit.

AllGoVision Alarm Center – License Plate Recognition Alarm – Preview and Search



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.