Datasheet
Traffic Management

Version 3.78
This Specification Sheet gives the details of system requirements, feature details and other salient points of AllGoVision’s Traffic Management Features.

Revision Date: January, 2017

AllGoVision Technologies Pvt Ltd
Email: contact@allgovision.com
Website: www.allgovision.com
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INTRODUCTION

AllGoVision is a Video Analytics software product for actionable intelligence for safety, security and business analytics. The product provides excellent return on investment for a wide range of applications, including City & Traffic Surveillance, Intelligent Traffic System (ITS), Parking Management and many more. The product analyzes rapidly the video for specific data, behavior patterns, tracking movement of objects including people and vehicles in the monitoring zones.

TRAFFIC MANAGEMENT SOLUTION

This Data sheet gives the details of system requirements, description of features and other technical details for AllGoVision’s Traffic Management Solution. The solution is applied for effective traffic control & detection of illegal traffic behaviour at Traffic Intersections, Highway & City Roads.

The Video Analytics product can use following features to provide information for optimized traffic management & situational alerts against traffic rule violations:

- Wrong Way Detection
- Speeding Detection
- Illegal Parking Detection
- Vehicle Counting
- Congestion Detection
- Parking Management (Parking Availability)
- License Plate Detection & Recognition* (in specific countries)
- Red Light Violation Detection

SYSTEM REQUIREMENT

AllGoVision analytics has the following system hardware and software requirements.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Window 7, 8, 10</td>
</tr>
<tr>
<td>Network</td>
<td>Ethernet, 1 Gbit or higher recommended.</td>
</tr>
<tr>
<td>Hardware Requirement</td>
<td>x86 Platform</td>
</tr>
<tr>
<td>Server requirement (for QVGA resolution)</td>
<td>Core i7 (6 Cores), 3 GHz, 8 GB RAM for up to 18 channels</td>
</tr>
<tr>
<td></td>
<td>Xeon 6 core, 3 GHz, 8 GB RAM for up to 18 channels</td>
</tr>
<tr>
<td></td>
<td>Xeon 12 core, 3 GHz, 16 GB RAM for up to 36 channels (approx. 3 channels per core, suitable to add multiple CPUs in single</td>
</tr>
<tr>
<td></td>
<td>Note: For higher resolution and larger feature set consult AllGoVision</td>
</tr>
<tr>
<td>Resolution &amp; Frame Rate</td>
<td>Resolution: QVGA (320x240) resolution and above, up to 1080p Frame Rate &gt;15 fps for Traffic Management features &amp; LPR.</td>
</tr>
<tr>
<td>Stand Alone version camera support</td>
<td>Axis, Pelco, Bosch, Hikvision, Honeywell, IQinvision, Sony, Dahua, ISD, Panasonic, Brickcom, ArecontVision, Indigovision, Cisco, Samsung, Acti, Vision, Digital Watchdog, and others (ONVIF Cameras)</td>
</tr>
</tbody>
</table>
ALLGOVISION VIDEO ANALYTICS

The AllGoVision Analytics is robust to weather changes, lighting changes, tree swaying and other background distractions. The AllGoVision also works well in crowding conditions. The AllGoVision supports object classification.

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.

- **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**
- **Direct Camera** Connection
- **Option to run the Application as a Windows Service**
- **Counting report** generation with **Auto Emailler** & **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
- **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.
  - Supports **Parking Management Client**.
CAMERA INSTALLATION

Cameras should be angular, parallel to the road, at a height of 30 feet as illustrated below:

Camera Setup for Vehicle Counting, Illegal Parking, Wrong Way Detection, Speeding Detection

Angular Cameras,
Height of Installation (outdoor) = 30 feet
Cameras installation should be parallel to the road facing the monitored zone.
Moving traffic (no-congestion) scenario.
For speed measurement, the view should cover min. 30 m. length (along the motion-direction).

Alternative Camera Setup for Illegal Parking, Vehicle Counting, Speeding Detection

Vehicle Counting and Illegal parking shall also be detected with overhead/angular camera installed from a bridge over the road / highway.
Height of Installation = 30 feet

Camera Setup for License Plate Detection & Recognition, RLVD

Detection and recognition of license plates for Vehicles facing / moving towards the camera.
Height of installation = approx.4 feet
Camera focus has to be adjusted such that the license plate covers min.15-20% of camera view

Good quality camera with high shutter speed.
Full HD, 120 DB WDR, 30 fps Frame rate required.
Illumination =min 200Lux. With night IR illuminator
**DESCRIPTION OF THE FEATURES**

AllGoVision provides following features for traffic and parking management. AllGoVision also has License Plate Detection and Recognition features - currently supported in specific countries.

<table>
<thead>
<tr>
<th>Feature Code</th>
<th>Feature Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGV-VA-VHLC</td>
<td>Vehicle Counting</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-WWDT</td>
<td>Wrong Way Detection</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-IPDT</td>
<td>Illegal Parking Detection</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-SPDT</td>
<td>Speeding Detection</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-CNDT</td>
<td>Congestion Detection</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-RLVD</td>
<td>Red Light Violation Detection</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-PRMT</td>
<td>Parking Management (Availability)</td>
<td>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.</td>
</tr>
<tr>
<td>AGV-VA-LPDT</td>
<td>License Plate Detection*</td>
<td>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.</td>
</tr>
</tbody>
</table>
### License Plate Recognition*

<table>
<thead>
<tr>
<th>AGV-VA-LPRC</th>
<th>License Plate Recognition*</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="License Plate Recognition" /></td>
<td>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 &amp; law enforcement (detection of traffic rule violation and identification of the associated vehicle, detection of stolen cars etc.); vehicle access control &amp; task automation; automated parking &amp; toll management.</td>
</tr>
</tbody>
</table>

*Currently supported in specific countries.

### INTEGRATION

AllGoVision Video Analytics 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.
- It works independent of VMS.
- Directly takes the video feed from camera.
Architecture

Simple architecture schematics for with VMS and without VMS (Standalone) schemes are shown below. AllGoVision takes the video feed either from VMS or camera and processes in the AllGoVision video analytics server. The alarms can be viewed either in VMS Viewer (VMS Client) or in the Alarm Center (AllGoVision’s Alarm 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.

ALLGOVISION GUI

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.

AllGoVision product GUI consists of following seven tabs:

Server Setup Tab - The server setup tab consists of VMS or camera settings and other field details. You are able to view the video details from camera.

Analytics Setup Tab - The Analytics setup tab gives options to set the analytics fields for different features.

Advanced Setup Tab - This tab gives options to select advanced settings like camera environment, analytics processing complexity, shadow removal sensitivity, camera view, predefined object size and minimum object size.
**Trigger Based** - This allows running analytics from trigger like that from RFID.

**Report Tab** - This tab gives option to plot the statistics of counting applications. Both line and bar charts are possible. This also has auto e-mailer and export of plots and report.

**AllGoVision GUI – Analytics Setup Tab**

**Alarms in Alarm Center**
### Parking Availability in Alarm Center

<table>
<thead>
<tr>
<th>Group</th>
<th>Maximum Occupancy</th>
<th>Current Occupancy</th>
<th>Total In</th>
<th>Total Out</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>100</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>99</td>
</tr>
<tr>
<td>G2</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>G1</td>
<td>100</td>
<td>4</td>
<td>22</td>
<td>18</td>
<td>96</td>
</tr>
</tbody>
</table>