



USER MANUAL

Version Number: 3.5

<http://www.allgovision.com>

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1 INTRODUCTION

This user guide gives the user a thorough understanding of the AllGoVision product and enables the usage of AllGoVision more efficiently. It also describes the key features of AllGoVision along with graphical user interface.

In addition, the guide also explains the various module procedures, which allows the users to operate the functions with ease and efficiently.

2 INTENDED AUDIENCE

The intended audiences for this guide are Integrators, resellers and other users.

3 SYSTEM REQUIREMENTS

AllGoVision Analytics has the following system hardware and software requirements

| 4 Category | 5 Requirement |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating System | Microsoft® Windows Vista® Windows XP Windows 7 Windows 8 Windows Server 2003 /2008/2012 |
| CPU | Intel® Core2™ Duo, minimum 1.6 GHz |
| RAM | Minimum 512 MB (1 GB recommended for large views, 1 GB recommended on Microsoft Windows Vista). |
| Network | Ethernet, 100 Mbit or higher recommended. |
| Graphics Adapter | AGP or PCI-Express, minimum 1024×768 (1280×1024 recommended), 16 bit colors |
| Hard Disk Space | 50 MB Free |
| Hardware Requirements | x86 Platform |
| Software requirement: Milestone Software | Milestone Directshow 2.8 |
| Server | Milestone server software for Analytics integration with the following components Milestone XProtect Enterprise/Corporate/Professional/Express/Expert XProtect Analytics 2.0b/2.1c, Milestone Analytics Generic plug-in, Milestone Smart Client, Milestone Transact Analytics Alert plugin |

6 CONVENTIONS USED

| Convention | Interpretation |
|-----------------------------------------|-------------------------------|
| All uppercase (example: VA) | Acronym |
| Bold with initial caps (example: Start) | Commands on menus and buttons |

7 TERMS AND DEFINITIONS

| Terms | Definitions |
|-------|---------------------------|
| BA | Behavioral Analytics |
| DSP | Digital Signal Processors |
| FPS | Frames Per Second |
| GUI | Graphical User Interface |
| IP | Internet Protocol |
| PTZ | Pan-Tilt-Zoom |
| VA | Video Analytics |
| VAA | Virtual Area Analytics |
| VLA | Virtual Line Analytics |

8 BEFORE USING 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, factory automation, loss prevention, public liability assessments, training, consumer behavior analysis, monitoring traffic flow, and many more.

The technology evaluates the contents of video to determine the specific information about the video contents. The product analyzes rapidly the video for specific data, behavior patterns, tracking movement of people/objects in monitoring zones.

9 ALLGOVISION GUI INSTALLATION STEPS

Steps to install AllGoVision product GUI:

Install the **msi** AllGoVision. This will create shortcut for AllGoVision.exe on the desktop.

Launch AllGoVision product GUI from the desktop shortcut. The settings are described in [Server Setup](#) section

On launching application, Password needs to be provided. The default password is **"admin"** for Admin user

10 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. The references are given to Milestone VMS and Axis cameras at different places. However the settings would be common for any VMS and camera integration.

AllGoVision product GUI consists of six tabs:

- Server Setup Tab
- Analytics Setup Tab
- Advanced Setup Tab
- Video Stitching Tab
- Trigger Based Tab
- Report Tab

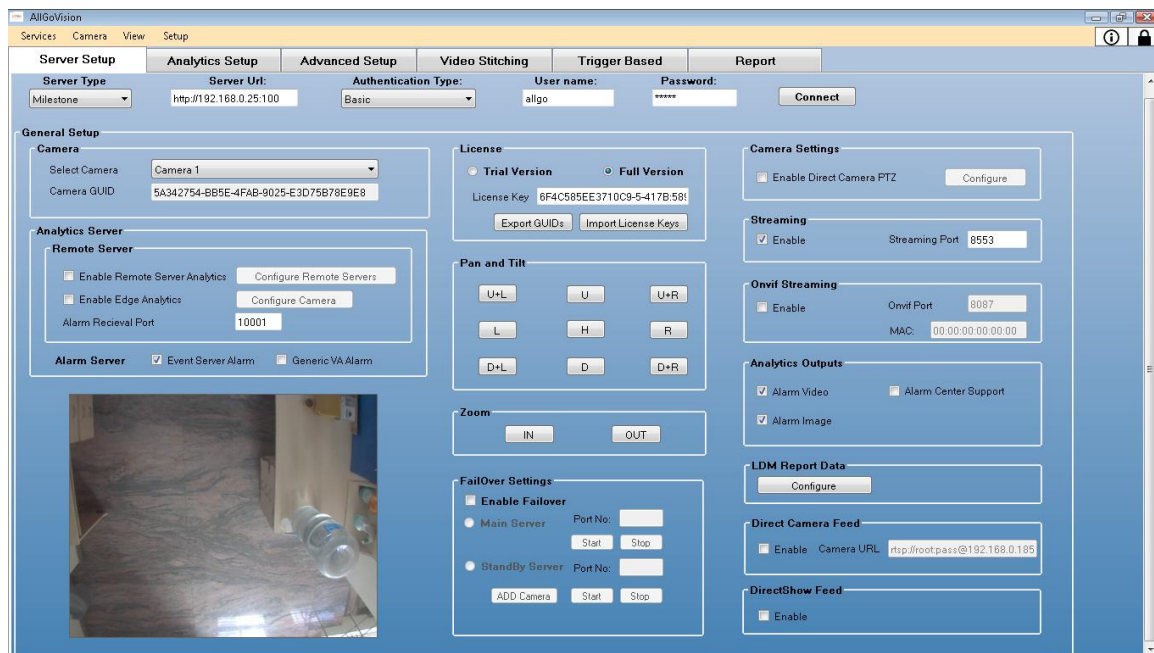


Figure 1 AllGoVision Product GUI

10.1 SERVER SETUP TAB

The server setup tab consists of Milestone server and other field details. You are able to view the video details from Milestone server.

The other field consists of:

- General Setup
- Analytics Server
- License
- Remote Server

Service
Pan and Tilt
Zoom
PTZ Speed
Failover settings
Onvif Streaming
Streaming
Alarm Files
Video Stabilization
Direct Camera Feed
Direct Show Feed

Note:

The Milestone server should be running for AllGoVision to receive video input. For more details on Milestone Server settings, refer [Appendix](#) section.

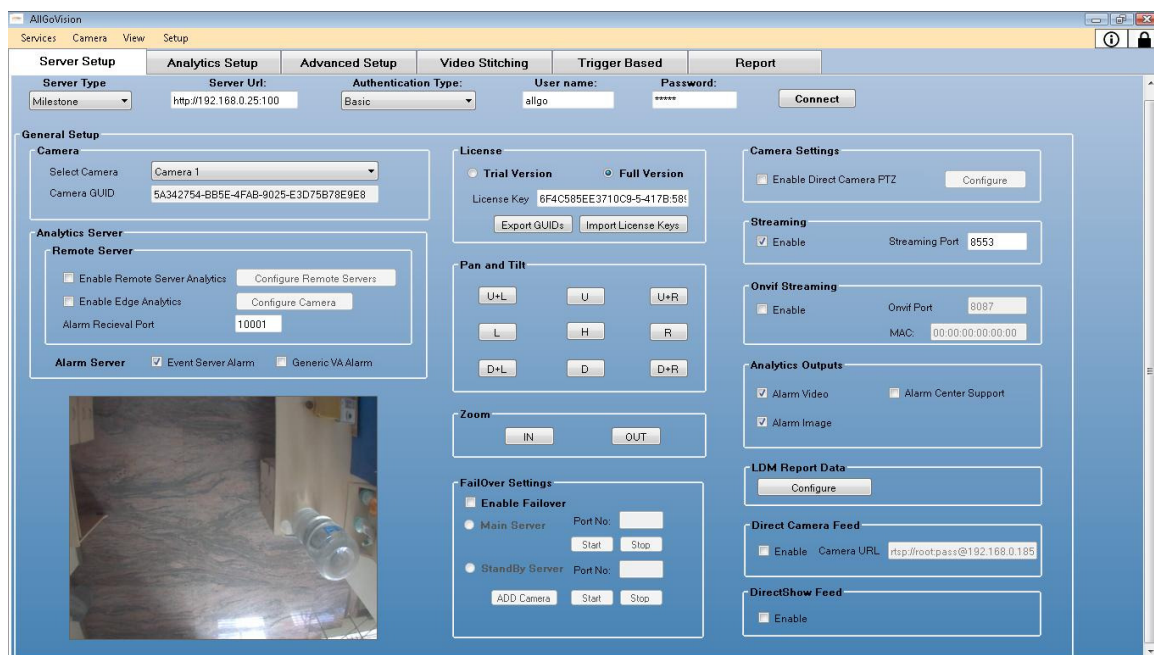


Figure 2 Server Setup Tab

Select Server type


2 options provided.

1. Milestone – If Milestone is selected, the VA gets video from Milestone server and sends alarm to Milestone
2. Direct Camera – If Direct Camera is selected, the VA gets video from camera directly

If Milestone is selected, enter the Server URL. Server URL is the IP address of machine where Milestone server is installed. For example: If server is local host and port address is 100 then it is http://localhost:100

Select the authentication type from the drop down list as Basic, Windows, or Windows Default


Note: Default set it as **Basic** for Milestone Professional

 **Note:** Use **Windows** authentication for video stitching

Enter the user name of the Milestone server as XXXXXXXX

Enter the password of the Milestone server as

Click **Connect** to connect to the milestone server to view the live video

 **Note:** Before selecting Camera, if you click **Connect** then a message displays as **"Select Camera"**

For each camera selected in Server Setup, settings can be done in Analytics setup and Advanced setup.

For Direct Camera, the Camera URL needs to be provided. For example for Axis camera rtsp://ip_adx/axis-media/media.amp


Few makes the URL is pre configured and is also editable

Different camera manufactures have different URL. The URL's can be found from <http://www.soleratec.com/rtsp/>

10.1.1 GENERAL SETUP

The General Setup section consists of camera details.

Select the camera from the drop down list

 **Note:** The selected camera is set in the milestone server to view the live video
Displays the Camera GUID based on the camera selection. For example: 67BA633A-4E1F-445D-8B94-7947C4614

 **Note:** The live video is displayed only after selecting the camera.

After selecting the camera, click **Connect** to view the live video.

10.1.2 ANALYTICS SERVER

The Analytics Server section consists of options to enable analytics to run on local server, remote server or on edge. If no options are enabled Analytics will run on Local server. For Remote Server options, see Remote server section.

There are also additional options provided for Analytics Server section. It is in the file menu Setup->Configure Server

Here analytics server name, server location and Alarm storage path is set.

Enter the Alert Name. Alert name is displayed in the Milestone client when the alert is received. For Example - Office

Enter the Camera location. Camera location is displayed in the Milestone client when the alert is received. For Example - Office Entrance

Alarms can be sent to Milestone Generic VA or Event server. If Event server is selected AllGoVision provide its own plugin. If Generic VA is selected Milestone Generic VA plugin for Smart Client needs to be used.

10.1.3 LICENSE

The License section provides the license number of the server setup.

There are 2 options

- i) Trial License – This requires license key to be entered

- ii) Full License – This requires license key to be entered

Export GUID will export camera GUIDs connected to Milestone server into CSV file.
Import License keys will import **license key text file**.
Example for license key 426D03C6E42B6149-5-925D

Note: To request for the license key text file send an email with GUID of camera after installation to contact@allgosystems.com

10.1.4 REMOTE SERVER

Analytics can be run on remote server. Remote server can be Windows or Linux machine. The configuration can be done by clicking on configure remote server. Similarly Analytics can be run on edge like Axis camera or Linux box. Please read Edge installation readme file for more details.

10.1.5 PAN AND TILT

The Pan and Tilt section helps you to view the live video in different positions with more details.

| Different Positions | Description |
|---------------------|-------------------------------------------------------------|
| U+L | Click U+L to Move the camera in both up and left positions |
| U | Click U to see the video in the upper position |
| U+R | Click U+ to see the video in both up and right position |
| L | Click L to see the video in left position |
| H | Click H to see the video in Home position |
| | Note: The default home position is set in the camera |
| R | Click R to see the video in right position |
| D+L | Click D+L to see the video in both down and left positions |
| D | Click D to see the video in down position |
| D+R | Click D+ to see the video in both down and right position |

10.1.5.1 Header

The Header section allows you to select the header name of the video, camera name and live indicator details.

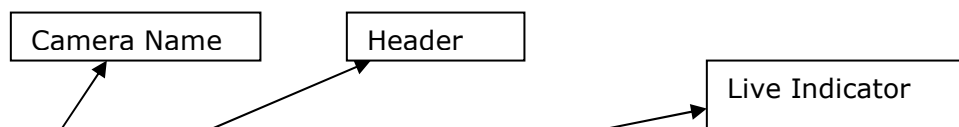





Figure 3 Header Image

Select **Display Header** checkbox to view the header of the live video. For Example - Toolbar of the image

Select **Display Camera Name** to view the camera name of the live video. For Example - [Acti] Camera 1

Select **Display Live Indicator** to view the indication of the live video. For Example - REC

 **Note:** You can select all the checkbox options or as per your requirement

10.1.6 ZOOM

The zoom sections allows you to adjust the video zooming size to view

Click **IN** to zoom the video

Click **OUT** to zoom out the video

Select **Maintain Image aspect ratio** checkbox to view the video in the aspect ratio given by the camera.

10.1.7 PTZ SPEED

The PTZ speed sections allows you to set the Pan-Tilt-Zoom speed of the image

Enter the PTZ **Speed** size as 1.0

Enter the PTZ **Step Size** as 2.0

10.1.8 FAILOVER SETTINGS

Enable Failover will enable the failover server. If failover server support is not required disable it.

Main Server: If software is running on main server then this needs to be clicked

Standby server: If software is running on standby server this needs to be enabled.

Use Add camera to add cameras for failover support.

10.1.9 ONVIF STREAMING

AllGoVision can act as virtual camera. It means it can stream video using ONVIF protocol. This can be used to stream analytics overlaid video, stitched video, Stabilized video to Milestone.

Steps for ONVIF streaming

- i) Enable ONVIF streaming
- ii) Enable Streaming
- iii) Provide the MAC address for streaming
- iv) Go to Analytics setup and press start
- v) Add the camera in Milestone (Camera needs to be added only after starting Analytics)

10.1.10 STREAMING

This will stream analytics overlaid output. Enable this. Provide appropriate port like 8954. One can click on View Video of Analytics Tab to see the output when analytics is running

10.1.11 ALARM FILES

This will enable alarm files storage. 2 options are provided.

1. Enable Video – Stores alarms in MP4 files. Video duration is 10 seconds
2. Enable Image – Stores alarm images.
3. Enable Alarm Center support. This will use AllGoVision Alarm Center. The details are provided in the Appendix about Alarm Center
4. If Alarm Center is enabled, go to Setup->Database Configuration. Provide Service IP, password and set Storage duration.

10.1.12 VIDEO STABILIZATION

This will enable video stabilization. Analytics can be run on stabilized video by selecting analytics on stabilized video

10.1.13 DIRECT CAMERA FEED

This will allow to get Direct Camera feed only for Milestone Analytics library instead of Directshow filter. This will be helpful to reduce processing power. The alarms are sent and viewed in Smart Client.

10.1.14 DIRECT SHOW FEED

This will allow to get for Milestone Analytics library from Directshow filter.

10.1.15 CAMERA SETTINGS

This will allow for direct control of PTZ camera for PTZ operations. Currently few cameras are enabled for direct camera PTZ control for auto PTZ operations. IP address and other camera details needs to be provided for this.

10.1.16 SERVICE

This is a file menu to start Windows service for Analytics.

- 1) Click on Services->Analytics->Status->Enable
- 2) Do the settings for the cameras you want to run in Analytics Setup. After doing analytics settings press **Save** settings for each region.
- 3) Cameras can be added by clicking the Select Cameras button in Service box of Server Setup and checking and unchecking the cameras from the list.
- 4) Once the cameras are selected, go to Camera -> Save Configuration. Press Service -> Analytics-> Start .
- 5) Similarly stop & refresh buttons are provided. Refresh would start analytics for cameras for which new settings are saved using Camera -> Save Configuration
- 6) Even addition of new cameras can be done while the service is running. Select the new camera and make the settings for the same and save it. Then click on Service -> Analytics-> Refresh.
- 7) When service is enabled, the GUI can be closed.

10.1.17 USER CONFIGURATION

This is a file menu to enable User configuration.

- 1) Go to Setup->User Configuration
- 2) Using Edit Credentials, provide credential details. Only Admin can edit credentials in Edit Credential.

10.2 ANALYTICS SETUP TAB

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

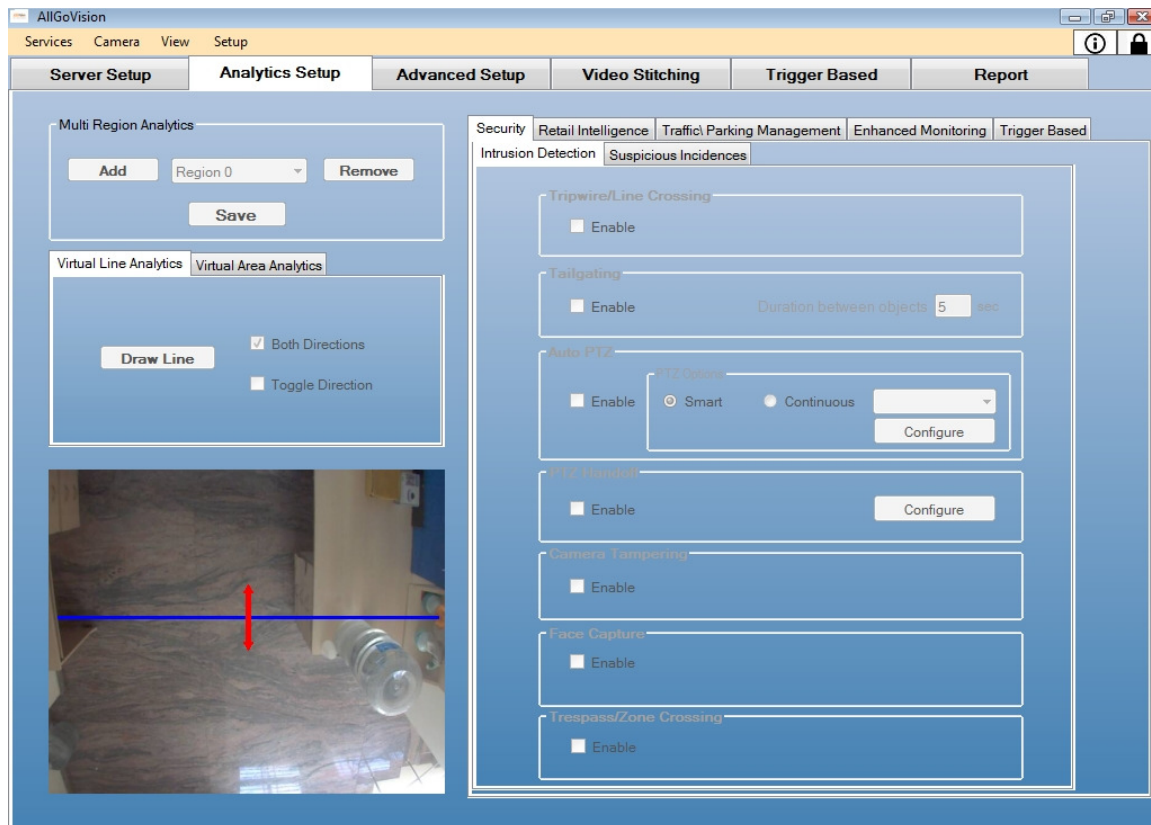


Figure 4 Analytics Setup Tab

After selecting the respective options in the different features, the general instructions are

Click **Save** to save each region settings

Click **Camera->Save Configuration** to save all the settings. This should be done before starting service

Click **Camera-> Start Analytics** to start the selected analytics. Once Analytics started running the other tabs can't be opened

Click **Camera-> Stop Analytics** to stop the selected analytics

Click **Camera-> Schedule Analytics** to schedule the selected analytics. The AllGoVision Scheduler displays as below

Click **View-> Alarm log** to view the log file

Click **View-> Overlay Video** to view the file

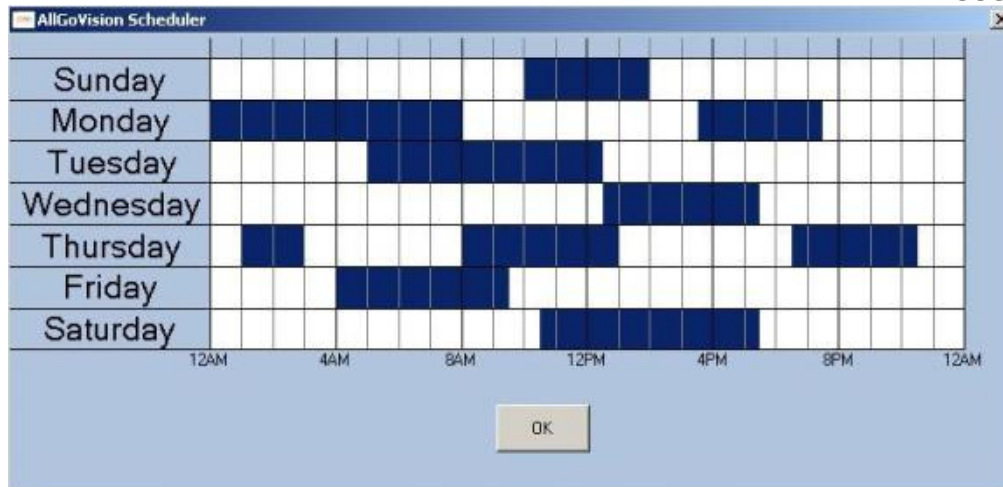


Figure 5 AllGoVision Scheduler

Note:

Scheduler is used to omit the timings where the analytics selected need not be run. Default it is enabled for 24 hours, and 7 days a week. To disable the scheduler, highlight the timings.

Note:

The alerts can be seen in Milestone Smart Client. Milestone Analytics server has to be started for analytics to work. Refer [Milestone settings](#) section for more details.

| Function Name | Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Multi Region Analytics | The Multi Region Analytics allows Multiple Line setting or Area based rules. |
| Virtual Line Analytics | Select the Virtual Line Analytics radio button to enable the tripwire and tailgating features of the live video image. Note: When Virtual line is enabled, default line is shown in the image |
| Virtual Area Analytics | Select the Virtual Area Analytics radio button to enable the trespass and behavioral analytics namely loitering detection, crowd detection and left out baggage detection features of the live video image. Note: When Virtual Area is enabled default area is seen in the image |
| Enable Auto PTZ | Select Enable Auto PTZ checkbox to automatically do one step PTZ operation to capture closer video of violator. Note: The home position needs to be set to the area focused in camera when Enable Auto PTZ is enabled The advanced setting allows continuous tracking of the object |

Note:

You can select either **Virtual Line Analytics** or **Virtual Area Analytics** radio button options and cannot select both simultaneously.

The features are divided into five categories.

1. Security-> Intrusion detection
 - a. Tripwire/Line crossing
 - b. Trespass/Zone crossing
 - c. Camera Tampering
 - d. Tailgating
 - e. Auto PTZ
 - f. PTZ handoff
2. Security-> Suspicious Incidences
 - a. Left Object Detection
 - b. Missing Object Detection
 - c. Loitering/Advanced Motion Detection
 - d. Crowding
 - e. Counter Flow
3. Retail Intelligence applications
 - a. Counting
 - b. Queue Management
 - c. Face detection
4. Traffic/Parking management
 - a. Illegal Parking
 - b. Wrong way detection
 - c. Speeding detection
 - d. Vehicle counting
 - e. Congestion detection
5. Surveillance -> Enhanced monitoring
 - a. Smoke Detection
 - b. Video Stabilization
 - c. Video Stitching
6. Trigger based detection
 - a. Unauthorized person detection
 - b. Unattended object detection

Though the features are categorized into applications, the details are given here based whether it is based on Virtual line based rule or virtual area based rule.

10.2.1 MULTI REGION ANALYTICS

Allows multiple line setting or area based rules

Select the **Region** from the drop down list to draw different regions to detect multiple violations at the same time.

Click **Add** to add rule/region. The drop down menu allows you to select the region.

Click **Remove** to remove the region.

10.2.2 VIRTUAL LINE ANALYTICS

The Virtual Line Analytics are Tripwire, Tailgating, Counting and Queue management. Using drop down select Analytics type as one of Line Crossing or Counting. Line crossing features are Tripwire and Tailgating. Counting features are object counting and Queue management.

TRIPWIRE

Select **Enable** checkbox to enable the feature for alerts

Steps to draw the Tripwire Line in the Image

Click Draw Line

Click on both sides of the line you want to draw.

The line will be visible with directions.

Change the direction using **direction check boxes**

Select **Both Direction** checkbox to draw the line both the sides

Select **Toggle Direction** checkbox to draw the line at multiple sides

TAILGATING

Select **Enable** checkbox to enable the feature for alerts

Steps to draw the Tailgating Line in the Image

Click on both sides of the line you want to draw.

The line will be visible with default direction.

The direction can be changed using the toggle direction button.

Note: Only one direction can be selected, the default or opposite side.

Duration between objects (in sec)

Enter the number that you want to set for the duration between the objects for tailgating. For Example – Enter as 5 seconds

The screenshot shows a software interface for configuring virtual line analytics. It has a blue header and a light blue background. The 'Analytics Type' is set to 'Counting'. Under 'Object Counting', the 'Enable' checkbox is checked, and 'Overhead People Counting' is unchecked. Under 'Queue Management', the 'Enable' checkbox is unchecked. To the right, there are two checkboxes: 'Both Direction' (checked) and 'Toggle Direction' (unchecked). A 'Draw Line' button is located at the top right. At the bottom, there are two dropdown menus: 'Queue No.' and 'Region Type'.

COUNTING

Select **Enable** checkbox to enable the feature for alerts.

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There is an additional option provided. This is Overhead people counting. This can be used in close range overhead cameras where only people walk. This requires Advanced settings. The 4 rectangles should be drawn here.

Steps to draw the virtual line for counting is same as that of Tripwire and Tailgating

QUEUE MANAGEMENT

Select **Enable** checkbox to enable the feature. Select the Queue number and region type as entry or exit. For every queue number one can define region type as entry or exit. The exit region will give waiting time.

10.2.3 VIRTUAL AREA ANALYTICS

Select Virtual Analytics type. There are 3 types Object Motion Detection, Video Smoke Detection and Face Detection.


The features of Object Motion detection are Trespass, wrong way detection, Loitering detection, Illegal parking, and Crowd detection.

TRESPASS

Select **Enable** checkbox to see the trespass output in the milestone client.

Enter the number of points

Click **Draw Area** and draw the area on the Image viewer.

 **Note:** To draw a rectangle, select number of points as 4. Any shape up to 10 points is provided



WRONG WAY DETECTION

Select **Enable** checkbox to enable the Wrong Way Detection feature

Draw Direction helps to draw the direction of wrong way

10.2.3.1 Behavioral Analytics

The features of Behavioral Analytics are Loitering detection, Crowd detection, Left out baggage detection/ Object removal detection, and Illegal parking detection.

Area Under Consideration field gives the option to select the area for the features

Select **Virtual Area** radio button to enable features for virtual area defined.

Select **Complete Frame** radio button to consider entire frame for detection

LOITERING DETECTION/ADVANCED MOTION DETECTION

Select **Enable** checkbox to view Loitering feature in the output.
Enter the Loitering **time in seconds**

ILLEGAL PARKING DETECTION

Select **Enable** checkbox to enable the Illegal Parking feature.
Enter the Illegal Parking **time in seconds**

CROWD DETECTION/CONGESTION DETECTION

Select **Enable** checkbox to view crowd detection feature in the output
Enter **Maximum crowd capacity** which is approximate number of people for crowd detection. For example – 4

Enable Congestion detection enables detection of congestion. It is based on the area covered by the objects.

It requires pre defined object size calibration to be done in Advanced setup.

The predefined object size needs to be drawn. If there is no object drawn then alarm would be triggered based on the percentage of area object is covered. For example - 40

LEFTOUT BAGGAGE / MISSING OBJECT DETECTION

Select **Enable LBD** checkbox to view Leftout Baggage Detection feature in the output

Select **Enable MOD** checkbox to view Missing Object Detection feature in the output
Enter **unattended time in seconds** for left out baggage detection / Missing Object Detection. For Example – 30 seconds

There is an additional option provided Improve Sensitivity. This will detect all static objects. This can be used in case higher accuracy needs to be obtained. But false alarms will be higher.

 Note:

This requires advanced settings like Minimum object size, Maximum object size and unit distance

CAMERA TAMPERING

Select **Enable** checkbox to enable Camera Tampering feature

OVER SPEEDING DETECTION

Select **Enable** checkbox to enable Over speeding detection. The speed limit is entered in the box. This feature requires a unit distance to be drawn in advanced settings

Video Smoke Detection

☒ Enable Video Smoke Detection

Detection Sensitivity

Configured Parameters

Frame Rate (in fps) Time (in sec)

Smoke Density

☐ Medium ☐ High

Installation Type

☐ Indoor ☐ Outdoor

Smoke Movement

☐ Slow ☐ Medium

VIDEO SMOKE DETECTION

Select **Enable** checkbox to enable Video Smoke Detection.

Detection Sensitivity: Enables sensitivity settings depending on scenario. Higher on scroll bar means more sensitive for detection, there could be more false alarms.

Pre configured parameters are shown to user that these are used for detection.

The pre configured settings are Frame rate, Time (in sec), Smoke Density, Installation type and Smoke movement.

The screenshot shows the 'Virtual Area Analytics' configuration window. At the top, 'Analytics Type' is set to 'Face Detection' and 'Number of Points' is 4. A 'Draw Area' button is present. The 'Face Detection' section has a checked 'Enable Face Detection' checkbox. Below it, 'Detection Complexity' is shown with a slider between 'Speed' (Low, Med, High) and 'Accuracy' (High, Med, Low). The 'Face Profile' section has radio buttons for 'Front Profile', 'Side Profile', and 'Both'. The 'No of Faces' section has radio buttons for 'Single Face' and 'Many Faces'.

FACE DETECTION

Select **Enable** checkbox.

Detection Complexity: Speed is high means lower processing power. In this case Accuracy will be lower. Adjust settings accordingly.

Face Profile: Front or side face

No. of Faces: Single or Many faces

AUTO PTZ

There are 2 PTZ options

1. Smart PTZ – When Smart PTZ is used, the rules can be set for PTZ camera. The PTZ camera will be in monitoring position at the home position. The home position needs to be set for the PTZ camera. On violation of rule, one step zoom is done to capture closer snapshot of the violator.
2. Continuous – In this case there is no rule set for PTZ camera. There are 2 options provided here.
 - a. Single object – PTZ cameras latches onto one object at the centre of the camera and continuously tracks it. The home position needs to be defined. There is direct camera PTZ control is provided. Currently few cameras are supported
 - b. Multiple object – PTZ camera starts tracking any person who is on

edge of the frame and moving out of view

PTZ HANDOFF

This feature requires mapping of positions of Fixed camera to PTZ presets. When any rule is violated in fixed camera, PTZ camera is triggered to Fixed camera position.

TRIGGER BASED DETECTION

AllGoVision provides new feature call Trigger based detection. In this case Analytics is started based on Trigger like RFID. There are currently 2 features supported

- a. Unauthorized people detection
- b. Unattended object detection

There are advanced setup required and it is provided in advanced setup tab. The timeout needs to be set. Timeout is the period till Analytics will be analytics and sends alarms.

10.3 ADVANCED SETUP TAB

The **Advanced Setup tab** allows you to set the camera environment, analytics processing complexity, shadow removal sensitivity, camera view, predefined object size and minimum object size.

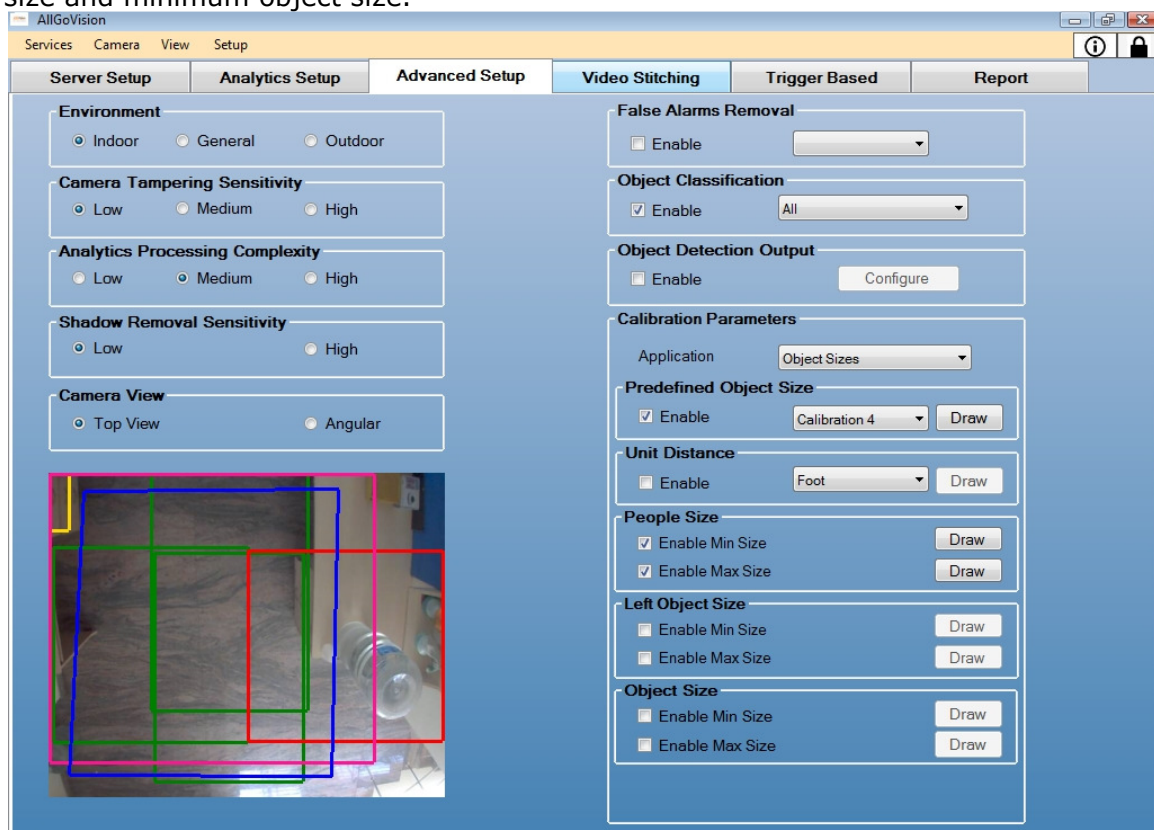


Figure 6 Advanced Setup Tab

Calibration Parameters

Application Object Sizes

Predefined Object Size

☒ Enable Calibration 1 Draw

Unit Distance

☒ Enable Foot Draw

People Size

☐ Enable Min Size Draw

☐ Enable Max Size Draw

Left Object Size

☐ Enable Min Size Draw

☐ Enable Max Size Draw

Object Size

☐ Enable Min Size Draw

☐ Enable Max Size Draw

Calibration Parameters

Application Overhead People Counting

Predefined Object Size

☒ Enable Calibration 1 Draw

Unit Distance

☒ Enable Foot Draw

Overhead People Counting

☐ Trolley Detection

Crowd Detection

☐ Enable Crowd Speed 1 2 3 4 5

Occupancy Threshold

0 10 20 30 40 50 60 70 80 90 100

Calibration Parameters

Application: Masking Regions

Predefined Object Size

☒ Enable Calibration 1 Draw

Unit Distance

☒ Enable Foot Draw

Masking Regions

☒ Enable

Add Mask 0 Remove

Region Properties

No of Points: 4 Draw Area

Calibration Parameters

Application: Advanced Object Detection

False Object Removal

☐ Enable

☐ Enable Auto Image Update Capture Image

Upload Image

Browse

Upload

FG Sensitivity

Improved Object Detection

☐ Enable

Object Detection Sensitivity

Learning Rate

Calibration Parameters

Application
Trigger Based Detection

Predefined Object Size

☒ Enable
Calibration 1
Draw

Unit Distance

☒ Enable
Foot
Draw

People Size

☐ Enable Min Size
Draw

☐ Enable Max Size
Draw

Left Object Size

☐ Enable Min Size
Draw

☐ Enable Max Size
Draw

Alarm Configuration

☐ Multiple Alarms

Trigger Parameters

Trigger Timeout: 10 sec

| Field Name | Description | Example |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Environment | <p>Select the Environment radio buttons to Indoor, General or Outdoor options.</p> <p>Options:</p> <p>Indoor – When the camera is installed indoor</p> <p>General – (Default) Setting to work both in Indoor and Outdoor</p> <p>Outdoor - When the camera is installed outdoor</p> | |
| Analytics Processing complexity | <p>Select the Analytics Processing complexity radio buttons to Low or High options.</p> <p>Options:</p> <p>Low - Takes lower CPU cycles accuracy. There may be effect on performance</p> | |

| Field Name | Description | Example |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| | <p>Medium – (Default) provides better tradeoff between CPU cycles and accuracy</p> <p>High - (Default) Takes higher CPU cycles and gives best accuracy</p> | |
| Shadow Removal Sensitivity | <p>Select the Shadow Removal Sensitivity radio buttons to Low or High options.</p> <p>Options: Low - (Default) Removes light shadows High - Removes medium dark shadows. Affects slightly object detection accuracy</p> | |
| Camera View | <p>Select the Camera View radio buttons to Top View or Angular options.</p> <p>Options: Top View - When the camera is installed at the top for applications like people counting Angular - (Default) The camera view for object detection is not just vertical but also angular</p> | |
| PTZ options | <p>Smart – This enables one step PTZ control after violation. This option is used for both monitoring and one step PTZ control to capture closer picture of violator</p> <p>Continuous - This option allows continuous tracking of the object.</p> | |
| Object Classification | <p>All – Classification information not used in rules</p> <p>People – This enables only people counting</p> <p>Vehicle - This enables only vehicle counting</p> | |
| Predefined object size | This information helps in | |

| Field Name | Description | Example |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| | <p>camera calibration. Enable checkbox allows to enable or disable this setting Click on draw and draw the size of the person. Multiple calibration points can be added. For a single point it is considered uniform through the frame This feature helps in crowd detection and people counting feature improvement For overhead people counting 4 calibration points are required at each corner of the frame.</p> | |
| Minimum object size | This option enables to draw minimum object size for detection. Enable checkbox allows to enable or disable this setting | |
| Maximum object size | This option enables to draw maximum object size for detection. Enable checkbox allows to enable or disable this setting | |
| Unit distance | This option enables to draw unit distance in meters or feet. This setting is must for over speeding detection. Enable checkbox allows to enable or disable this setting | |
| Left out baggage size | Minimum and Maximum object size is set here for left out baggage size | |
| People size | The size filter specified for people in loitering detection | |
| False Alarms removal | Minimizes False alarms. It can be set to low, medium or high | |
| Face Detection size | This will enable to setup Minimum and maximum face detection size. Select Application type to set this feature | |
| Head Detection Size | Select Application type as | |

| Field Name | Description | Example |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| | Head Detection to set head detection size settings. Draw two circles. Set Detection sensitivity and Visibility threshold to get optimum performance. | |
| Trolley Detection | When enabled it can detect trolley or strolleys | |
| Crowd Detection | When over head detection is enabled, crowd detection will detect crowd formation. | |
| Masking regions | One can draw masking regions. Alarms inside masking regions ignored | |
| False object removal | It is based on reference image. On enabling it removes false objects formed due to illumination changes. This is to be used only in special cases | |
| Object detection sensitivity | Lower means object detection is highly sensitive , higher means less sensitive | |
| Improved object detection | This will improve detection of motion objects | |
| Learning rate | High means fast learning, object gets absorbed in 20-30 seconds. High means slow leaning. | |
| Trigger based detection | Trigger time out is provided here | |

10.4 REPORT TAB

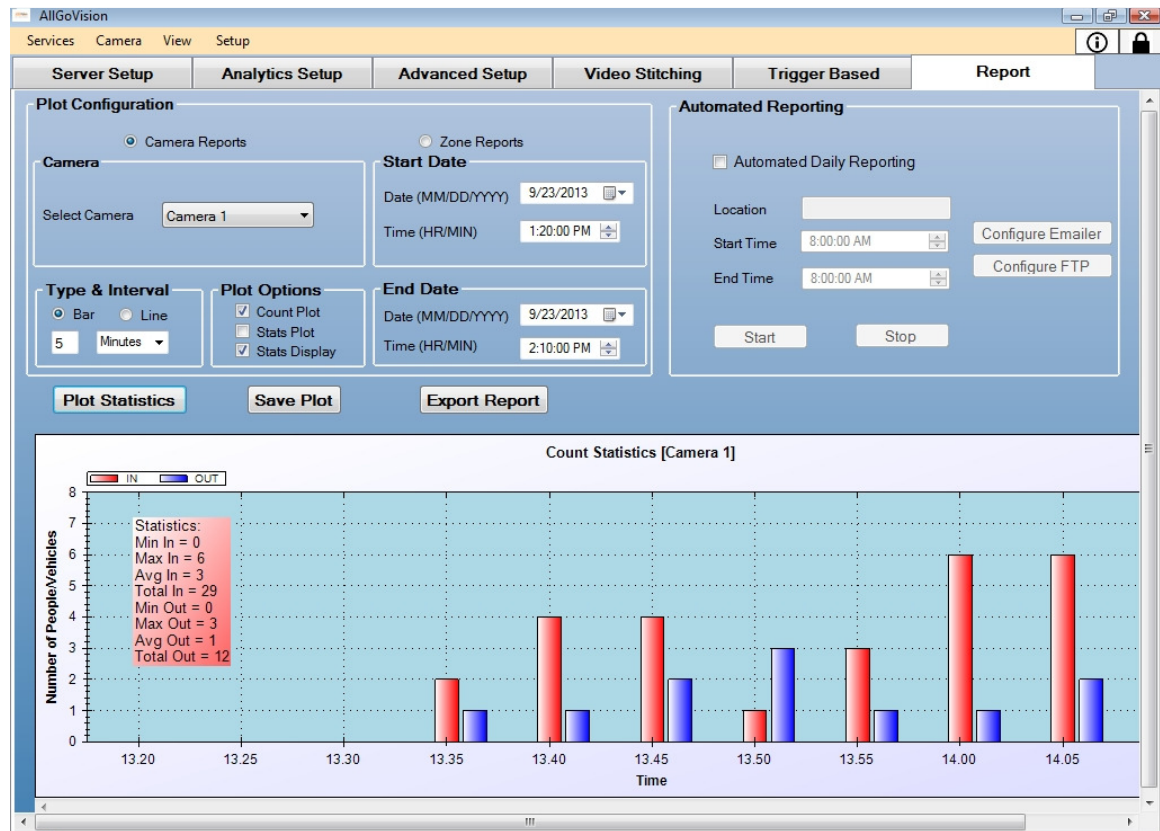


Figure 7 Report Tab

Use Report to generate people or vehicle counting report for the selected camera.

1. Select Camera report or zone report. In zone report multiple cameras can be added and results are plotted for multiple cameras together.
2. Set **Start Date** and **End Date**.
3. Set **Interval** and **Chart Type**.
4. Use **Plot options** to enable or disable statistics
5. **Plot Statistics** will plot the graph.
6. **Save Plot** saves the plot displayed
7. **Export Report** will export the people counting statistics in CSV file

Automated reporting

This will send daily e-mailer with attached reports in CSV format and plots in JPEG format.

There is an option of Daily and Hourly report, start time, end time and daily mailing time.

Provide the credentials of mailing server and enable SSL. Save and Start will enable automated reporting

10.5 VIDEO STITCHING TAB

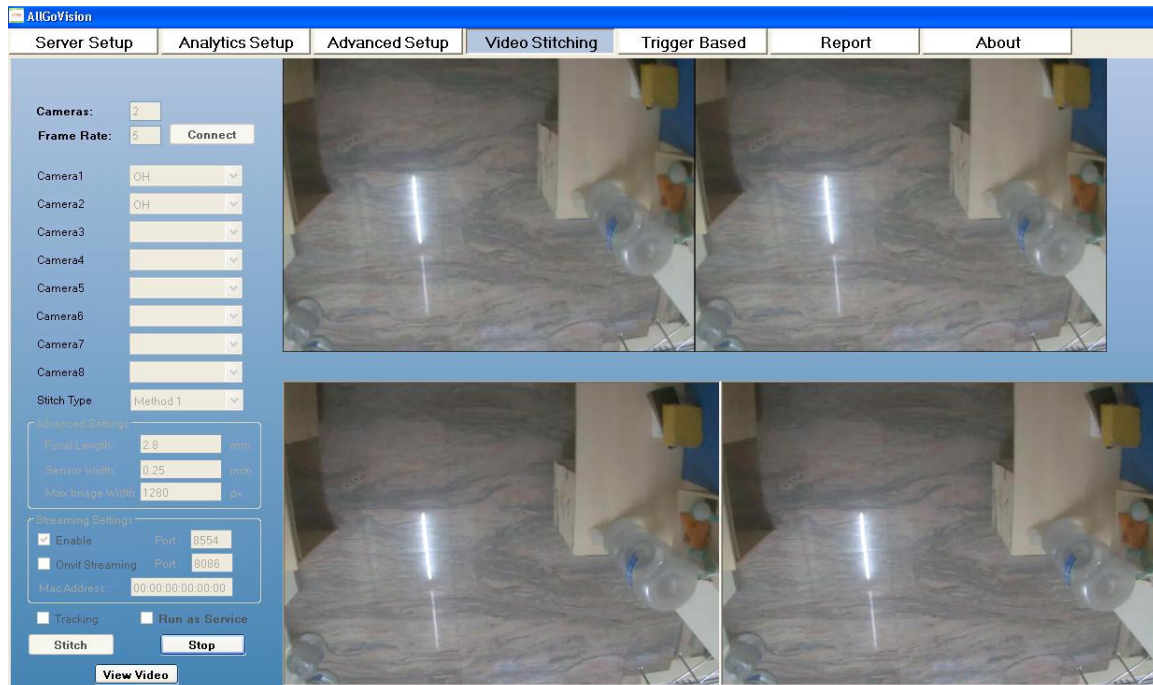


Figure 8 Video Stitching Tab

Server URL: Please input the Milestone server URL.

Server Type: Enterprise or Corporate

Input cameras / Total cameras: Please input number of input cameras to be stitched

Press **Connect**. Then select the cameras to be stitched. Camera's needs to be selected in order from left to right.

Enable tracking will allow tracking of objects.

Enable Onvif streaming to stream stitched video

Press Save. Press Start to start Sticking. Press Stop to stop stitching.

Go to Services->Stitching. Press Start and Stop for running stitching in service.

Depending on camera alignment getting proper stitch will take time. If proper stitching is not obtained, press **Stop** and then press Stitch again. Repeat these steps till one get stable stitching. Try changing camera position for better alignment if one doesn't get proper stitching even after repeated trials.

There are 2 methods for stitching

Method 1 stitches cameras which are parallel to each other

Method 2 stitches cameras which are angular to each other. In this case few parameters need to be provided like focal length.

Note: Use **Windows** authentication only for Video stitching.

10.6 TRIGGER BASED DETECTION

The screenshot shows the 'Trigger Based' configuration window in the AllGoVision application. The window has a menu bar with 'Services', 'Camera', 'View', and 'Setup'. Below the menu bar are tabs for 'Server Setup', 'Analytics Setup', 'Advanced Setup', 'Video Stitching', 'Trigger Based' (selected), and 'Report'. The main content area is divided into several sections:

- Link - Camera Group Association:** A table with columns 'Group 1', 'Group 2', 'Group 3', 'Group 4', and 'Group 5'. To the right of the table are 'Dissociate' and 'Associate' buttons. Above the table are 'Save Configuration', 'Undo Changes', and 'Restore Configuration' buttons.
- Camera Group Configuration:**
 - Camera Group Name:** A text input field.
 - RFID Tag:** A text input field.
 - Add:** A button to add a new camera group.
 - Camera Group Properties:**
 - Select Group:** A dropdown menu.
 - Remove:** A button to remove a selected group.
 - RFID Tag:** A text input field.
 - Associated Cameras:** A list of camera names with 'Edit' and 'Done' buttons.
- Link Configuration:**
 - Link Name:** A text input field.
 - Add:** A button to add a new link.
 - Links List:** A list of links with a 'Remove' button.
- System Configuration:**
 - RFID Reader Configuration:** A button.
 - Auto Trigger Configuration:** A button.

Figure 9 Trigger based detection

The Trigger based detection triggers analytics for a group of cameras based on trigger. This can be used like on Trains where analytics needs to be started for all cameras on all coaches when it is emptied for intelligent left object or unauthorized people detection. Currently RFID triggers and auto triggers are supported. Similarly other triggers like from access control can be supported.

RFID Reader configuration: RFID IP configuration is done here.

User Configuration: Different user types can be added here.

Link configuration: Create Links here. A particular link can be selected and it appears in Link-Camera association.

Camera Group name: Camera groups are created here. If RFID is used, RFID tag numbers are associated here. Each camera group can associate up to 3 cameras.

Link-Camera group association: Associate different camera groups to link here. If a trigger is obtained for the link analytics is started for all camera groups associated with link.

10.7 ABOUT & LOCK BUTTON

Click **i** in the AllGoVision application to view the AllGo Embedded Systems product information, version number, copyright information and the product description. Also provided lock button

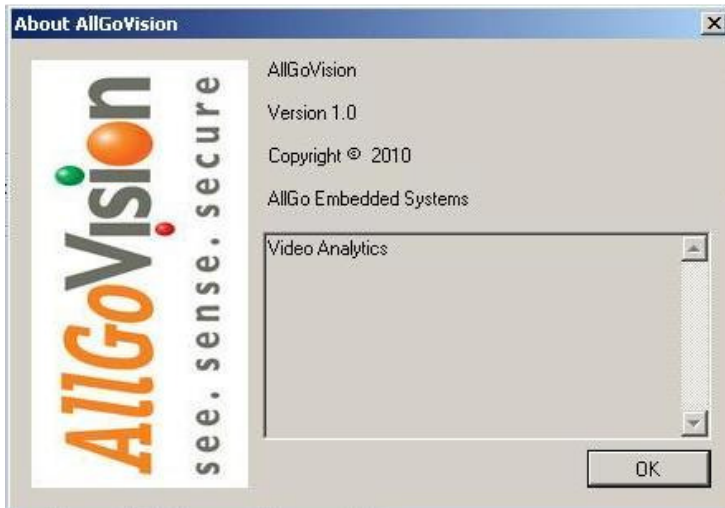


Figure 10 About Information

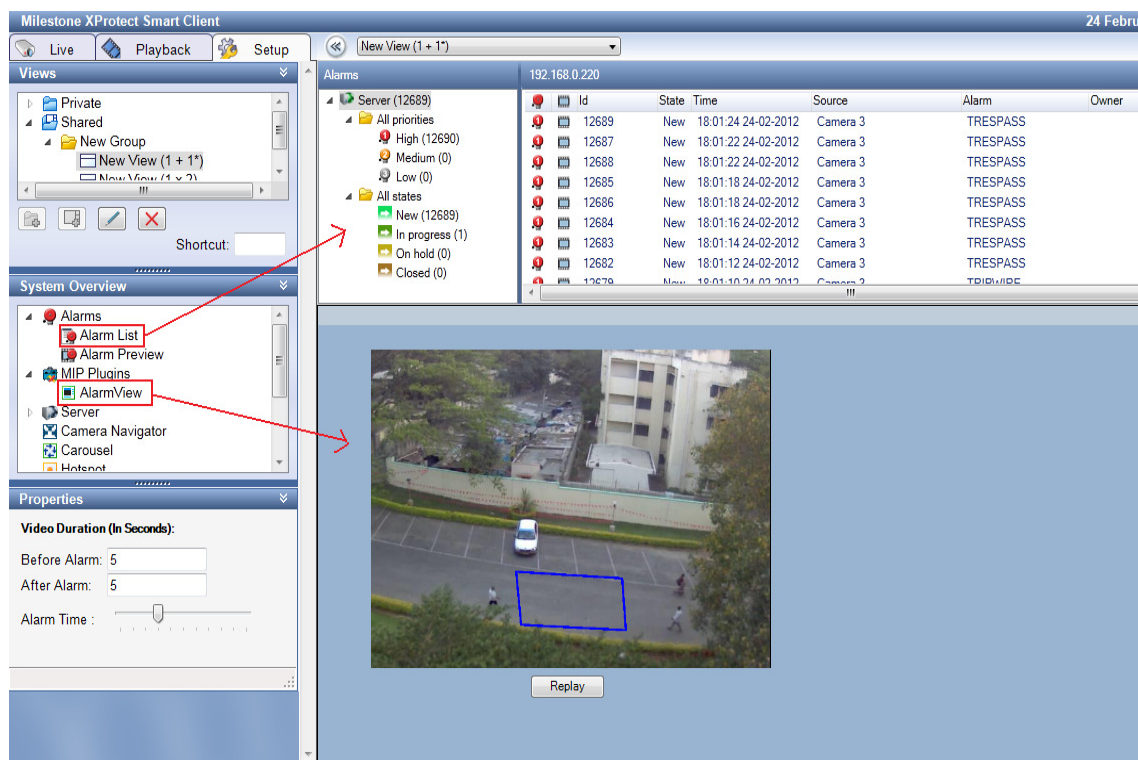
Click **OK** to close the About Window.

11 MILESTONE SETTING AND TESTING

Open Milestone smart client and connect to server.

With MIP SDK & AGV Smart Client plugin:

- Download AlarmView folder from FTP. Place the AlarmView folder (provided with the AllGoVision Installers) in the following folder.
`<Smart_Client_Installation_Dir>\MIPPlugins\
 (Eg. C:\Program Files\Milestone\XProtect Smart Client\MIPPlugins)`
- Open Smart Client. Create a new view (preferably 1+1* View.). In the Setup tab, choose the Alarm List and Alarm View Plugins.



Options are provided for the AlarmView plugin in the Properties window. The properties will show up when plugin is clicked. Set the properties for better results. Set Before Alarm time and After alarm time. Slide Alarm time to align alert rectangle with the object. Enable Alarm popup to get alarms on popup. Move to Live to watch alarms

Milestone XProtect Smart Client 19 March 2012 16:05:33

Live Playback Setup New View (1 + 1*)

Views

- New View (2 + 8)
- New View (XProtect Trans)
- New View (1 + 1*)
- New View (1 + 2)
- New View (1 + 3)
- New View (1 x 3)
- New View (Alert View Layout)

Alarms

192.168.0.220

| Source | Alarm | Owner | Message | Type | Rule | Location | Tag | Vendor | Object |
|----------|------------------|-------|-------------|--------------|----------------|----------|--------|-----------|--------|
| Camera 2 | TRESPASS | | TRESPASS | Unidentified | AREA ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 2 | TRESPASS | | TRESPASS | Unidentified | AREA ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | OBJECTS_COUNTING | | IN = 15 OUT | Pedestrian | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | TRIPWIRE | | TRIPWIRE | Unidentified | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | OBJECTS_COUNTING | | IN = 15 OUT | Pedestrian | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | TRIPWIRE | | TRIPWIRE | Unidentified | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | OBJECTS_COUNTING | | IN = 13 OUT | Pedestrian | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | TRIPWIRE | | TRIPWIRE | Unidentified | LINE ANALYTICS | Entrance | Office | AllGo Sys | |
| Camera 1 | TRIPWIRE | | TRIPWIRE | Unidentified | LINE ANALYTICS | Entrance | Office | AllGo Sys | |

Alarm Preview Alarm Popup

Play Video

12 ALARM CENTER

AllGoVision Alarm Center

Filters

Filter By

Alarm Type: ALL Start Date: 8/19/2013 12:00:00 Source Location: ALL

Object Type: ALL End Date: 8/26/2013 12:00:00 Camera Name: ALL

Object Color: ALL Object Size: ALL

Filter

Alarm Details

| AlarmID | TimeStamp | AlarmName | ObjectType | CameraName | SourceLocati | AlarmDescrip | ObjectColor | ObjectSize |
|---------|---------------|-----------|--------------|------------|--------------|--------------|--------------|------------|
| 283 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Small |
| 282 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Tiny |
| 281 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Tiny |
| 280 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Tiny |
| 279 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Tiny |
| 278 | 8/22/2013 1:5 | TRESPASS | UnIdentified | Camera-7 | Entrance | TRESPASS | UnIdentified | Tiny |

Alarm Preview

Alarm PopUp

Alarm Details

TRESPASS
Camera-7
UnIdentified
Entrance
8/22/2013 1:54:

The alarm center snapshot is provided above. The installation and operation instructions can be found from Alarm Center readme manual. It provides support Search, Reporting, Heat Map and Motion Map. The reports are provided in pdf and excel format. The report can be scheduled to be sent via Email and FTP.

13 APPENDIX

The Appendix section consists of technical information and feature description.

13.1 TECHNICAL INFORMATION

To download Milestone Server and client software and User Manual, refer

<http://www.milestonesys.com/Downloads>

13.2 FEATURE DESCRIPTION

| Feature Name | Description | Example |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Tripwire | Detection of object crossing a virtual line | Intruder detection on fenced areas Alert monitoring at the entrance Illegal crossing of Railway line |
| Tailgating | Detecting a person (individual) or vehicle following too closely the person or vehicle in front to get past access controlled entrances or barriers. | Unauthorized access at the mall entrance, gated communities, office premise |
| Counting | Counting of people or vehicle after crossing a virtual line | People counting to analyze foot fall statistics in malls, retail shops Vehicle counting to analyze traffic capacity |
| Trespass | This feature is used for detecting objects entering into virtual area | Illegal entry into restricted area in Banks, Shops |
| Wrong Way Detection | This feature is used for detecting people or vehicle moving in wrong direction | Vehicle moving in wrong direction in one way system People exiting at the designated entry only areas |
| Loitering Detection | This feature is used for detecting of object (Vehicle or person) persistence beyond a | People loitering in malls |

| Feature Name | Description | Example |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| | specified time in a virtual area | |
| Object removal detection | Detection of object removal like paintings hanging on a wall | Artifact protection in museums |
| Crowd Detection | This feature is used for detecting people gathering in a virtual area | Illegal crowding on roads, railway station, in front of buildings |
| Left out Baggage Detection | This feature is used for detecting the people leaving out baggage in public place | Threat detection due to unclaimed baggage in public place like malls, roads |
| Illegal Parking Detection | This feature detects parking of the vehicle in no parking zone | Illegal parking on road sides in no parking areas Illegal parking of the vehicle in front of the gates |
| Camera Tampering | This feature detects Camera focus change or obstruction | |