

Wise Reference Manual Version 1.0

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1 - Introduction

About This User Guide

Welcome to viisights Wise!

viisights Wise (the system) is a real-time and recorded video analytics intelligence platform that uses artificial intelligence to achieve human-like video understanding. It performs detection and classification of objects, actions and events in live video and recorded video streams.

This user guide is intended for video analytics users and describes how to use the system. This guide assumes that you are familiar with basic video analytics concepts.

viisights Documentation

This user guide is part of a suite of viisights documentation, which also includes -

- viisights Wise Integration and API Guide
- viisights Wise Administration and Maintenance Guide
- viisights Wise Hardware Requirements
- viisights Wise Release Notes (per release)
- viisights Wise Product Specification

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Introduction

Introducing Viisights Wise

Governments, municipalities, enterprises and individuals utilize vast amounts of videocapturing devices in order to cope with safety hazards, surveillance and security threats. They face the challenge of having to extract objects, events and actions of interest from huge amounts of video content in a timely manner in order to achieve actionable insights and to take quick and appropriate action.

The viisights system intelligently and automatically understands videos originating from diverse video sources in real time and supports thousands of channels per account. The system's intelligent detection mechanism automatically classifies objects, actions and events and triggers alarms for the events of interest to the customer.

The system's mode of operation -

 Processing Live Video Streams – Process video streams from live cameras and trigger alarms based on detection of events, actions and objects of interest, within a few seconds of their occurrence.

The system is a software stack that leverages standard off-the shelf servers that can be hosted in a cloud environment or as an on premise deployment. Specifications are provided in WISE Hardware Requirements document.

Artificial Intelligence Technology for Behavioral Understanding

The system's unique technology understands and automatically identifies the behavior of a human or vehicle in a video stream, as well as detects smoke and fire. The system not only detects the existence of an object (such as a person) in an area, but also understands that person's behavior – such as a person throwing an object or people fighting.

The system utilizes sophisticated computer vision technology together with machine learning based on deep learning neural networks.

What Is Detected?

The system is based on artificial intelligence time-based technologies that facilitate human-like video understanding that can detect a wide variety of objects, actions and events in the video and create alarms for selected detections. You may refer to *viisights Wise System Specifications* for a full list. The following are a few examples –

- Human Behavior
 - Human Movement Running
 - Human Throwing an Object
- Human Suspicious Behavior -
 - Human Lying on the Ground
 - Human Posing as Holding a Weapon
- Violent Activity –
- People Fighting
- Vehicle Behavior
 - Vehicle-Vehicle Collision

Video Stream and Detection Specifications

The supported input video stream specification is defined in WISE Product Specification, Product Interfaces Chapter, Input section. The system detects events of interest that comply with the Detection Specification chapter in the WISE Product Specifications.

Concepts And Terms

Alarm

An **Alarm** is a system notification that alerts the user about video stream detections. An alarm can be predefined and changed by the user.

Class

A **Class** is one of four types of classifications detected by the system in a video stream – <u>Object</u>, <u>Action</u> and <u>Event</u>. The system is provided with a variety of predefined objects, actions and events.

The following are assigned to each instance of the detection of a class – a name (such as **People Fighting**), a start time, end time, location and potentially a display size in the frame. This information can be viewed as follows –

- WEB UI On the timeline and in the player provided by the system.
- Output API The system detections can be retrieved using the system's API.

Object

An **Object** is the entity detected in a video, such as a **Person**, **Car**, **Motorcycle**, **Handbag**, **Fire**, **Smoke** and so on. An object may have attributes, such as **Color**. In the context of the system, a person holding a gun is classified as a **Person** with the attribute **Holding a Gun**.

Action

An Action defines an <u>object's</u> behavior. For example, a **Person Walking, Person Throwing Object**, **Person Falling**, **Car Moving** and so on.

Event

An **Event** defines an interaction between two or more <u>objects</u>. These can be objects of the same type (such as two cars) or two different types of objects, such as a person and a car. For example, **People Fighting**, **Car-Car Collision**, **Vehicle Stopping in Junction**, **Person Getting Out of Car** and so on.

Attribute

An **Attribute** is a property of an <u>object</u>. Each type of <u>class</u> has a variety of attributes that describe it. For example –

- For a person Upper Color, Lower Color, Holding a Gun, Age Group (Child, Adult) and so on.
- For a car Color, Type (Sedan, Bus) and so on.

You may refer to the *viisights Wise System Specifications* for the full list of the attributes provided in the system.

Video Source

A **Video Stream Source** is a video stream that was uploaded, processed and saved by the system. There are two ways for Video Streams to be processed by the system –

- Live Video Live video can be streamed into the system from a camera or a Video Management System (VMS). Each time the live video stream is stopped (either by the API or by the operator in the user interface), a video clip is created and saved in the system for a limited time.
- **Prerecorded Video** A prerecorded video clip can be uploaded to the system from a public URL. Refer to the "forensic section"

Unique Class Identifiers

Each detection of a class in a video stream is assigned a **unique identifier** (ID) by the system. This ID identifies the class detection within the video stream.

For example -

- **Same Identifier** The same unique identifier is retained for a person who walks behind a tree for a moment.
- **New identifier** A new identifier is assigned to a person who enters a public building and then leaves it within a few minutes.

Command and Control Center (CCC)

An external display control system (typically a security, surveillance or monitoring system) that receives alarms from the system via API, displays these alarms and detections and enables operators to analyze them along with their video.

Deployment Architecture

The following describes the components, connections and topology of the system's deployment architecture.



Figure 1 – Deployment Architecture

Video Input Sources

Live video can be streamed into the Video Engine via the Real Time Streaming Protocol (RTSP) directly from a video camera or from a Video Management System (VMS), according to your preference.

In addition, video can be stored in a repository and then streamed into the Video Engine for processing using the system's UI.

By default, the system does not store videos. However, if required, it can store video streams for short periods (a few hours), in order to allow the operator to access recent detections. Storing videos depends on available storage. You may refer to the <u>Retention</u> tab for more information.

Understanding Engine

The Understanding Engine processes and analyzes the real-time and recorded video that is streamed into it. It makes these results available in the web user interface and

can be retrieved by a CCC via API.

Alarm Console and Admin Console

The system provides a <u>web user interface</u> for two consoles: The Admin Console for configuring system behavior, watching and monitoring videos and the Alarm Console for viewing the alarms, detections and insights generated by the system. The functionality provided by this user interface can also be accessed using the system's API.

API

The system provides a proprietary API or Open Network Video Interface Forum (ONVIF) that enables external entities (such as a CCC) to register, start and stop video streams and to receive alarms and detections.

Wise Cluster Architecture

CCC Integration

The Video Engine supports both proprietary REST-based protocols and the standard ONVIF protocol, which enables its integration into any standard <u>CCC</u> via API.

In this case, the system administrator will only use the system's Admin Console interface in order to define the <u>System Settings.</u>

Using viisights Wise





This page displays a distribution of the alarms that have been detected across all the video streams, registered in the platform.

Under the assumption that each alarm was predefined by the user.

Dashboard **UI** Interface **Functionality** Explorer **UI** Interface Functionality **Basic** operations Pausing the Camera Alerts **Set Attributes Threshold** Manager Colored Tile Alert Indicators Alarm's Meta Data Alarm clip Vs. Live Stream Filtration Tools & Meta Data Table Filtration bar Auto Update toggle button Meta Data Table Data Table Left side filter menu Functionality Changing details on a specific alarm Camera Operations Alarm Bulk Update Operation Alarm Bulk Update Operation - from Meta Table

Dashboard

\bigcirc	ALARMS	DEVELOPER	HELP		^
Classes	Dashboard Explorer Manager				
Alarms • Fr Explorer	Alarms Dashboard 7 DAYS 24 HOURS 12 HOURS	LAST HOUR	LIVE Jan 12,	To Time 9:39:38 PM	
Occupancy					ļ
Content Management Jan 12, 2022 9:42:39 PM	No data to display				•

UI Interface

The Dashboard application is divided into three segments:

- 1. Filtration Tools:
 - a. Defines the boundary selection length of the **Timeline Tool** 7 days/ 24 hours/ 12 hours/ last hour/ live
 - b. Filter button additional filtration methods
 - c. **Paused Cameras** Opens a menu, displaying steams that were paused by the user/system

Alarms D	ashboard					7	7 DAYS	24 HOURS	12 HOURS	LAST HOUR	LIVE	T	×
Start Hour	End Hour	Classes Nothing selected	Priority Nothing selected	Category Nothing selected	State New	Closing Re Nothing	eason selected	AF	PLY			Ĵ	

2. **Timeline Tool** – a time range selection tool, allows the user to select a relevant time range - view in the graph display

From Time	Working window	To Time
Jan 12, 8:39:38 PM	Jan 12, 9:19:38 PM	Jan 12, 9:39:38 PM
	0	

3. **Graph Display** – flags a detected event/action/object, providing thumbnail vids along with relevant stream meta data

Each time the system detects an **Event**, **Scene**, **Action** or **Object**, a dot appears on the screen (based on what the user selected).

Each mark indicates an alarm.

\odot	ALARMS	HELP ADMIN 💄
لِمُ Alarms	Dashboard Explorer Manager	
Servers	Alarms Dashboard 7 DAYS 24 Hor	URS 12 HOURS LAST HOUR LIVE 🍸 🛣
Content Management	Rt From Time Working window	To Time Jul 5, 5:03:42 PM - Jul 5, 5:23:42 PM
्रि System Settings		
	rtg_stream 0 00 0 0 000 0	
	An	ation at is a state and an an an
	All rights reserved to Visights solution fid. Copyright @ 2015-2020. Version 2.1.0.9 - production_20210308_vise2_1022_gs14 041486ea	

Functionality

1. Hover over a dot alarm to displays a video thumbnail

	ALARMS																		HEL	P ADMIN 💄
Å Alarms	Dashboard	Explorer	Manager																	
Servers	Alarms Das	shboard														7 DAYS 2	4 HOURS	12 HOURS LAS	T HOUR LIVE	T X
Content snagement	From Time Jul 4, 5:23:42	PM									Working windo	w							Jul 5, 5:03:42 PM - 、	To Time Jul 5, 5:23:42 PM
८२२ System Settings																				
	rtsp_stream														•••			Track ID: 36 Http://192.168	1.20	••••
		OS OF CO AN	OS.OS.CO. Phy	CS US CO AN	CS: CJ-CD ON	CS. DE CO. P.M.	OS OG OD DAY	CS: JO, GO, GR	^{QS,11,QD} din	OS-12-OD AM	os:13.00 om om € cameras	OS I RECO	CS: JS CO PM	as: 16:00 pm	OS: 13:00 AM	CS. IR DO CH	05:19.00 Pm	OS-TO REOPLE_FICH	ТING 7/5/2021, 5:21:80 рм Фур Фур	C.F. 2.3. CD Day

- 2. Click on the thumbnail to play the video segment.
 - a. The name of the video and the URL of the server appears at the top-left corner
 - b. The alert ID appears at the top-right corner.
 - c. The date and time of the video
 - d. The event that was selected appear at the bottom.



3. Click the three dots icon, at the top-right corner to:

a. Pause the camera alerts

- i. The user can pause receiving alerts from a camera stream permanently or for a specific number of time, up to 24 hours
- ii. Click **SAVE** to save the new setting or **CANCEL PAUSE** to reinstate the alarm notifications.

street_stream			
Pause Camera Alarms			
Permanently pause alarms Set pause duration in minutes between 1 and 1440 (24 hours) 20			
	SAVE	CANCEL PAUSE	CLOSE

b. Edit alarm

c. Set attribute threshold (If relevant)



• The following displays –

\bigcirc	ALARMS		D
لُمُ Alarms	LIVE Dashboard Explore	Attributes Threshold	
₩ Explorer	Alarms Explorer	Attributes Select the attribute from the list below	B C 🕨
ſØ		CAR-TYPE-PRIVATE v	
Content Management	stream_gilad	Threshold Silde the silder to set the threshold (between 0 and 1) 0.65	19457 :
System Settings		SAVE CLOSE	
System Monitor	CAR SEDAN Apr 1	2, 2020 5 29:02 PM	Apr 12, 2020 5:28:52 PM

- Select the relevant attribute, and then set a new threshold by sliding the slider between 0-1 and then clicking **SAVE**.
- Setting an attribute threshold only affects the received alarms and not the system detection.
- A threshold attribute can also be set from the <u>Alarms Explorer</u> tab or from the <u>Threshold</u> tab in the stream settings.

Access the camera settings.



4. To select the time frame of the videos, click the options at the top-right corner or move the time bar.

Alarms Dashboar			7 DAYS	24 HOURS	12 HOURS	LAST HOUR	LIVE	T
From Time		Working window					т	o Time
Nov 26, 1:00:56 PM	Nov 26, 1:20:56 PM	Nov 26, 1:40:56	M			Nov	v 26, 2:00:	56 PM

5. By clicking on the funnel icon - the user can filter the alarms by date, start & end hour, classes, cameras, priority, category, state and closing reason.

Click on the 'APPLY' button to apply any changes.

Dashboard	Explorer	Manager										
Alarms	Dashboard							7 DAYS 24 HOURS	12 HOURS	LAST HOUR LI	VE T	×
Start Hou	End Hour	Classes Nothing selected	Priority Nothing selected	Category Nothing selected	State New	Closing Reason Nothing selected	APPLY					
From Ti Jul 4, 5:	ne 3:42 PM				Wo	orking window				Jul 5, 5:03:42 P	M - Jul 5, 5:2	To Time 3:42 PM

T

6. Click on the bell icon - to display a list of cameras with paused alarms.

Cameras with paused alarms	
office_exclution Pause time remaining 20 min	×
	CLOSE



Explorer

\odot	ALARMS	DEVELOPER	HELP	
⊕ _{Classes}	Dashboard Explorer Manager	E C		
Alarms				_
Occupancy Decupancy Vehicle	No Alarms			
Content Management Jan 12, 2022 9:55:20 PM	All rights reserved to Viisights solution ltd. Copyright © 2015-2020. Version 2.1.0.8 - production_20210308_wise2_tf22_gs1	14 cf369aeb		

UI Interface

The Explorer application is divided into two segments:

1. Filtration Tools:

Hide ROI	Hide Exclusions Hide Boxes 🔻 🗜 C 🕨							
Parameter Name	Description							
Hide ROI	Remove the predefined Region of Interest							
Hide Exclusions	Removes the stream's static predefined Exclusions							
Hide Boxes	Removes the detection boxes from the alarm recording							
Filter button	Provide additional filtration controls							
Export to CSV	Exports the meta data to a CSV format							
Refresh	Refreshes the alerts on the second segment							
Auto Start Refresh	Auto start refreshing the clips							
Paused Cameras	Opens a menu displaying steams that were paused by the user/system							
List/Gallery View	Changes the display view of the second segment							

2. List/Gallery View – Provides Meta data and a thumbnail display of the relevant alarm

Functionality

Basic operations

Click on the **start auto refresh** button - this will start showing new alarms as they are received by the system.

The user can filter the video streams in the display window, by clicking the **filter** button. Filtration can be done by the following parameters:

- Date
- Start & End hour

T

2 - Alarms

• A list display

10

office exclution disable the pause. The user can generate a **csv** file containing the alarms by clicking the following button.

The user can change the page view layout using the option at the top-right corner.

The user can display a list of cameras with paused X alarms - by click the bell icon - Click the X to

The user can manually refresh the page by clicking the Refresh icon.

The user can also select whether to hide the region of interest (ROI), the exclusions and

boxes, as described in the **Locations tab**



		_	
Hide ROI	Hide Exclusions		Hide Boxes

s with paused alarms



• Priority

• Detection Classes

• Category

• Cameras

• State

Closing Reason







×

CLOSE

• A gallery display

Pausing the Camera Alerts

The user can pause receiving alerts from a camera stream permanently or for a specific number of minutes, up to 24 hours.

Click **SAVE** to save the new setting or **CANCEL PAUSE** to reinstate the alarm notifications.

street_stream			
Pause Camera Alarms			
Permanently pause alarms Set pause duration in minutes between 1 and 1440 (24 hours) 20			
	SAVE	CANCEL PAUSE	CLOSE

In both Alarm Explorer and Alarm Dashboard, the user can see the level of certainty of a detection. In the example below, the system has a 92% certainty of the **Sedan car** detection.

\odot	ALARMS				DEVELOPER WISE
Anner Equirer	LINE Darboard Englow Alarms Explorer			Ŧ	8 C 🕨 X 💶
Constant Sectored Sec			44, Mo, 1 1407]		
	Kean Jaki 3070 Kean Jaki 3070	Mere, glaf 1977 Image: glaf 1977	Office-tension Office-tension	100 100 100 100 100 100 100 100 100 100	
Apr 12, 2020 2-42-50 PM	efice_comes 30154 [dise_carea 1947 I	Vist_MIL1 STOP 1	efice_sames 3016	



Set Attributes Threshold

1. Click the upper-right side, and then select - "Set Attribute Threshold"



The below following windows will display:

\bigcirc	ALARMS			C
Âlarms	LIVE Dashboard Explore	Attributes Threshold		
FR Explorer	Alarms Explorer	Attributes Select the attribute from the list below		₿ 2 ▶
Content Management	stream_gilad	CAR-IYPE-PRIVALE Threshold Side the slider to set the threshold (between 0 and 1)	, v	19457 :
र्ट्रि System		0.65		
Settings			SAVE CLOSE	
System Monitor	CAR SEDAN	12, 2020 5 29 02 PM	Apr 12, 2020 5 20:00 PM	Apr 12, 2020 5:28:52 PM

2. Set the relevant attribute threshold value you would like to set.



Setting an attribute threshold only affects the received alarms and not the system detection mechanism.

A threshold attribute can also be set from the <u>Alarms Dashboard</u> tab or from the <u>Threshold</u> tab in the stream settings

The threshold ranges from 0 to 1, and acts as a identification filter, for example: if the threshold is set on 0.5 for car detections, then the alarms will only be displayed when the system is "sure" of a 0.5 or more certainty that the object is indeed a car.

Manager

The Manager application is divided into 4 segments:

\odot	ALARMS											DEVE	ELOPER	HELP	ADMIN .	£ Î
Classes	Dashboard	Explorer	Manager													
لُمُ Alarms	×	0 NEW			IN PRC	0 Ogress			0 ON HC	DLD			0 CLOSE	D		:
· R	Alarm															
Explorer	Time	N/A	Priority					\sim		N			0 5 500			
	Dates		Start Hour	End Hour	Classes		Cam	eras		Priority		Catego	bry			
Occupancy					Nothing	selected	No	othing selected		Nothing	selected	Noth	ing selecte	ed		
	State		Closing Reason													
Vehicle	New		Nothing sele	cted	APPLY							Auto	o - Update	s Enabled		
	Filters		T 🔽 Previ	ew	Time	Priority		State	Ca	tegory	Camera		Alarm		ID	
Content	All (0)															
Management	New (0)															
Jan 12, 2022	In progress (0)						No No		rmo						
9:55:55 PM	On hold (0)							INO INE	N Ala	anns						
	0															* *

Colored Tile Alert Indicators

[≪] × 0	0	0	0	
NEW	IN PROGRESS	ON HOLD	CLOSED	:

Color	Description
Red	New Alarms, that were not viewed by any user
Orange	Alarms that are currently in process, viewed by at least one user
Grey	Alarms that are on hold, to be processed at a later time
Green	Closed Alarms, dealt by the user



When new alarms are detected by the system, an animation of a siren appears, followed by a notification sound. The sound can be muted by clicking on the speaker icon.

Alarm's Meta Data

Provides property data associated with the alarm and enables the user to modify some of them.

Alarm			
Time	N/A	Priority	~~~
Camera	N/A	State	\sim
Alarm	N/A	Category	\checkmark
ID	N/A	Closing Reason	\checkmark
Comment			

Property Name	Modification	Description
Time	No	Date & Timestamp of the alarm
Camera	No	Name of the Camera
Alarm	No	Type of the Alarm
ID	No	Unique ID of the alarm
Priority	Yes	High/Medium/Low
State	Yes	New/In Progress/On Hold/Closed
Category	Yes	Cars/People
Closing Reason	Yes	If alarm was closed, add infomration
Comments	Yes	Allows the user to add comments

Alarm clip Vs. Live Stream

Provides two distinct video displays:

- The relevant alarm clip– 3 seconds prior & after the triggered event
- The current live stream coming from the same camera



Filtration Tools & Meta Data Table

Filtration bar

The User can filter alarms by the following parameters

Property Name	Description
Dates	Filter between a range of dates
Start Hour	Filter from starting hour
End Hour	Filter from ending hour
Classes	Filter according to class
Cameras	Filter according to certain cameras
Priority	Filter according to priority
Category	Filter according to category
States	Filter according to states
Closing Reason	Filter according to closing reason

Click on the 'APPLY' button to apply any changes

APPLY

APPLY

Auto Update toggle button

When enabling the "Auto - Update" toggle button, alarms will be displayed automatically on the Meta data table, else the alarms will not registered



Dates	Start Ho	ur End Hour	Classes	Cameras	Priority	Category	State	Closing R	leason		
			Nothing selected	Nothing selected	Nothing selected	Nothing select	ted New	Nothing	selected APR	PLY Auto - Updates Dis	sabled
Filters	۳ 🔽	Preview	Time	Priority	State	Category	Camera	Alarm	ID	Event	Actions
All (0)											
New(0)											
In progress (0)						No No	Alormo				
On hold (0)						NO NE	w Alamis				
Closed (0)											

Meta Data Table

Time Aug 26, 2 Aug 26, 2	Nothing selected	d Nothing self	State New	Nothing selected Category Core	Nothing selected	New	Nothing selected	APPLY ID	Event
Time Aug 26, 3 Aug 26, 3	2020 4:03:32 AM	Priority Low ↓	State New	Category	Camera	Alarm		ID	Event
Aug 26, : Aug 26, :	2020 4:03:32 AM	Low 🗸	New	Com					
Aug 26, 2				Gais	junction_2	CAR		15892	5a8993d7a8e748bc87ade85952b49839
Contraction of the local division of the loc	2020 4:03:29 AM	Low 🕹	New	Cars	junction_2	CAR		15878	2719533cba80434cb8c3aa7715d72980
• Aug 26, 1	2020 4:03:25 AM	Low 🕹	New	Cars	junction_2	CAR		15860	a6028e20622f4833b4fc3e976038027d
Aug 26, 1	2020 4:03:19 AM	Low 🕹	New	Cars	junction_2	CAR		15832	77b4b5268caf4fc1865750c9d18dce3c
Aug 26, 1	2020 4:03:19 AM	Low 🕹	New	Cars	junction_2	CAR		15828	5fcdcb03123a4ae9a42bab5412e0155a
Aug 26, 7	2020 4:03:10 AM	Low 🗸	New	Cars	junction_2	CAR		15786	880a5517a1154116a87c3c318d4b1002
1 1	Aug 26, Aug 26,	Aug 26, 2020 4:03:19 AM Aug 26, 2020 4:03:10 AM	Aug 26, 2020 4 03:19 AM Low ↓ Aug 26, 2020 4 03:10 AM Low ↓	Aug 26, 2020 4 03: 19 AM Low ↓ New Aug 26, 2020 4 03: 10 AM Low ↓ New	Aug 26, 2020 4 53: 19 AM Low ↓ New Cars Aug 26, 2020 4 53: 19 AM Low ↓ New Cars	Aug 26, 2020 4 03: 19 AM Low 4 New Cars junction_2 Aug 26, 2020 4 03: 19 AM Low 4 New Cars junction_2	Aug 26, 2020 4.03.19 AM Low -¥ New Cars junction_2 CAR Aug 26, 2020 4.03.16 AM Low -¥ New Cars junction_2 CAR	Aug 25, 2020 4 03.19 AM Low ψ New Cars junction_2 CAR Aug 25, 2020 4 03.19 AM Low ψ New Cars junction_2 CAR	Aug 26, 2020 4.03.19 AM Low -¥ New Cars junction_2 CAR 19828 Aug 26, 2020 4.03.19 AM Low -¥ New Cars junction_2 CAR 15766

Data Table

The meta data table displays alarms that were received by the system. The table consists of a thumbnail preview of the alarm, as well as the following additional parameters:

- Time
- Priority
- State
- Category
- Camera

Preview	Time	Priority	State	Category	Camera	Alarm	ID	Event
	Aug 26, 2020 10:15:26 AM	High 个	New	Cars	junction_2	CAR_MOVING	10449	8b19687da5d1401096668b85fa107955
-	Aug 26, 2020 10:15:26 AM	Low 🕹	New	Cars	junction_2	CAR	83918	1a55513a866541058f6c1001aed235b1
	Aug 26, 2020 10:15:22 AM	Low 🗸	New	Cars	junction_2	CAR	83908	01df5eec2c764f8594046bac2186ddef

- Alarm ID
- Event ID

Left side filter menu

The user can filter alarms as a function of the alarms' state.



Functionality

Changing details on a specific alarm

When the user clicks on one of the alarms, the details of the specific alarm are shown in various locations:

Alarin				1.1
Time	Aug 26, 2020 4:13:49 AM	Priority	Low	~
Camera	junction_2	State	New	~
Alarm	CAR	Category	Cars	~
ID	19770	Closing Reason		~
Comment				

Alarm's Meta Data



Alarm Clip



Live Stream

The user can then :

- Leave a comment
- Change the priority/State/Category of the alarm
- When the users want to close an alarm, they can provide a reason for closing it

Alarm				8	÷
Time	Aug 26, 2020 4:13:49 AM	Priority	Low		~
Camera	junction_2	State	Closed		~
Alarm	CAR	Category	Cars		~
ID	19770	Closing Reason			~
Comment			Action taken No action taker False Alarm	1	



Save the changes by clicking on the save icon

Camera Operations

Clicking on the three dotted button, provides the user with various options to preform:

- Pause receiving alarms from a specific camera
- Set attribute and threshold
- Browse to the camera settings

Alarm			
Time	Aug 26, 2020 4:13:49 AM	Priority	Pause Camera Alerts
Camera	junction_2	State	Set Attribute Threshold
Alarm	CAR	Category	Go To Camera Settings
ID	19770	Closing Reason	Action taken 🗸
Comment			

Alarm Bulk Update Operation

The user can update all of the alarms in bulk, changing up to 1000 alarms at once.

1. Click on the three dotted button

\odot	ALARMS				DEVELOPER HELP	ADMIN 👤	^
Classes	Dashbeard Explorer Manager						,
لِيُ Alarms	≪ 0 NEW	0 IN PROGRESS	0 ON HOLD	0 CLOS	SED	:]

2. Click on the 'Select All'



- 3. Change the relevant details:
 - a. State of the alarms
 - b. Priority of the alarms
 - c. Add comments



- 4. Click on the 'SAVE' button.
- 5. After saving the changes, will see the following status bar



6. Once finished, the status will look like this.

Update Operation In Progress	×
Update Operation Done!	
	CLOSE

Alarm Bulk Update Operation - from Meta Table

- 1. Select the main check box or the relevant alarms
- 2. A popup window will appears, querying if to select the first 100 alarms, or all available alarms
- 3. After selecting the relevant choice, the windows disappears and the requested alarms will be marked
- 4. Click on the three dotted button



Dates	Mat	e toanne	Classes Nothing selected	Canecas Nothing selec	Pito Sed N	nty sthing selected	Category Nothing selected	State New	Closing Reason Nothing selected	475.9	Auto - Updates Disabled	0
Filters	T R	Preview	Time	Priority	State	Catop	vy Camera	Alarm		0	Event	Actions
AI (40%)		743	Jul 5, 2021 3, 39/37 PM	Lov-4	See		media_5	PERSON_REINQ_MOTO	0CYCLE 10045		73554cc9tax+854866c97ac4054d5d	1
In programmed (0)		15	Jul 5, 2021 3 39 82 PM	Los 4	Are .		mails_5	PERSON_REINS_MOTO	ROVELE 18835		982345collar14088ca7887264118786	÷
On hold (0) Chised (2295)			Jul 5, 2029 3:37:54 PM	Lov-è	See		media_5	MOTORCYCLE	0540		08/16e00009-4448e1104024040ee172	1
		1	Jul 5, 2021 3 37 47 PM	Los 4	Are .		mails_6	MOTORCYCLE	8626		40154740330362200456740480544	÷
		1	345.202523737 PM	Loviè	New		media_5	MOTORCYCLE	8014		2904407400745846245445841324434	1
	H		Jul 5, 2021 3 37 28 PM	Los-4	Are .		resis_1	MOTORCYCLE	8546		212001-00010-0010-001077420512	ł

Event	Actions
78594cc9fcee4984b66cf81ac4084d5d	:
9822d3ccdaa14cf6bca786729d1197	:
bfc1dad866fb444ba1c84324bd3aa172	:
eb19e7e633dc4c328b0d507eb49bf94d	:
298efd974087458a82b5de58d132a43a	:
2a298e40b63446f0a64b9a77742051c7	:

5. Click on 'Choose action' for selection' button



- 6. The following will appear.
- 7. Next configuration steps are similar to previous section

Jpdate all the selected a	arms with the followin	g	
Change State			~
Change Priority			~
Add to existed Comments			
you have selected 369 alarms wit	n state 'New'		
		SAVE	CLOSE



\odot	CONT	ENT EXPLORE	R				DEVELOPER HELP ADMIN		
⊕ Classes	Found	i 30 contents				Search		٩	
<u></u>		Preview	ID ÷	Туре 🗧	Name 🗧		Length ÷	Upload Time +	
				~					
Explorer	+			STREAM			00:00:00	Jan 17, 2022 2:25:50 PM	
Ccupancy	+			STREAM			00:00:00	Jan 17, 2022 2:00:12 PM	
Vehicle Counting	+			STREAM			00:00:00	Jan 17, 2022 2:00:12 PM	
<u>.</u>	+	2 miles		STREAM			00:00:00	Jan 17, 2022 2:00:12 PM	
Estimate	+			STREAM			00:00:00	Jan 17, 2022 2:00:11 PM	
Content Manageme	+	1		STREAM			00:00:00	Jan 17, 2022 2:00:11 PM	
IS System	+			STREAM			00:00:00	Jan 17, 2022 2:00:11 PM	
lan 17.	+	1		STREAM			00:00:00	Jan 17, 2022 2:00:10 PM	
2022 2:27:02 PM	+	15		STREAM			00:00:00	Jan 17, 2022 2:00:09 PM	

The Explorer lists the Realtime and past streams, that were processed by the system.

The past streams time period is defined in the <u>Retention</u> tab.

• Each time either the API or the user, stop a video stream, a new video clip is saved.

• Clicking the + icon, will reveal and list all of the relevant video clips associated to the same video stream.

\odot	CONT	TENT EXPLORER			DEVELOPER HELP ADMIN	\odot	CONTENT EXPLORER		DEVELOPER	HELP ADN	lin 👤
Classes		Preview	ID 0	Type :	Name :	Classes	Bescription: N/A	STREAM	1 100 1 1074		/
Q Alarms	Ē		8117168	STREAM	7 mar 25 million - citrano	Alarms	A 1-3 Year & Marco - Marco	Jan 17, 2022 12:19:32 AM - RUNNING	00:00:00		
Explorer	+		8217544	STREAM	3 may 2 million - channe 8 may 17 million - channe	Explorer R Occupancy	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Jan 16, 2022 2:08:32 PM = Jan 17, 2022 12:10:53 AM	10:02:21	-	
Rehicle Counting	+	and an and a	_1	STREAM	Lanar speece	Length Vehicle Counting		Jan 14, 2022 12:17:53 AM - Jan 14, 2022	22:17:31		
Jan 17,	+		811111100	STREAM	8 may 28 million - channel	Jan 17,	_	10:35:24 PM Jan 13, 2022			
2022 2:33:38 PM	+		10104-0016	STREAM	1 - 100 - 1 - 100	2022 2:37:52 PM	3 - 2 may 8 output - strand	5:00:00 PM = Jan 14, 2022	07:11:58		

The example below shows multiple video clips from a single video stream

Analysis Dashboard

Upon double clicking on one of the video clips, the **Stream Analysis Dashboard** will appear.

\odot	STREAM ANALYSIS DASHB	OARD					DEVELOPER	HELP ADMIN	
Classes Classes Aurms Fictorer Occupancy	Stream RUNNING	His Beer Mis Libet	Fibre EVENT CAR, GETS, MTO, ZONE CAR, GE	Print				O RESET FILTERS	
Vehicle Counting Market People Estimate	Title: Description: Start: Jan 14, 2022 12:10:10 AM End: Jan 14, 2022 10:30:20 PM							₩LIVE	
Content Management	BRAWL CAR_GETS_INTO_ZONE GROUP								
System Settings System	PEOPLE, FICHTING MOTORCYCLE, MOVING FIRE					_			
Jan 17, 2022 2:48:13 PM	Server Time: Jan 17, 2022 2:48:04 PM DD: 0	00.19:30 00.20:00 00.20:30 (0.21.00 00.21.50 00.22.00 00.22.30	00:23:00 00:23:30	00:24:00 00:24:30 00:25:00	00:25:30 00:26:00 00:26:30	00.27:00 00.27:30 00.28:00	00:28:30 00:29:00	
	All rights reserved to Visights solution IId. Copyright 0 2015-2020. Version 2.1.11.0_13 - production_4.1.1.1.1_1 BUILD_INR								

• When clicking on a detected class (e.g. a purple bar segment) in the **Detection Graph**, this will synchronizes the Video Player to the position in which the class was detected, as well as draws the Boundary Boxes of the selected class.



Occupancy

The occupancy application allows the system to detect and count the amount of people crossing a virtual line. The static virtual yellow line is plotted on the video stream - enabling the system to keep track on the amount of people entering and existing a specific area.

Occupancy Prerequisite Dashboard Area Settings General Settings

Prerequisite

Before getting started - make sure that you have set-up the <u>Occupancy</u> <u>Location</u> setting

Dashboard

- 1. The Area section displays a **list of cameras** the user can select individual or multiple cameras to view the various occupancy aggregated data
- 2. The user can filter the aggregated data according to live, last hour/12/24 hours or last 7 days. In addition the user can Export the data to a csv file
- 3. The user can filter the aggregated data according to **entries, exits and the total** amount of occupancy from the Area selection
4. The dashboard table displays the aggregated data from Area selection camera

\odot	OCCUPANCY						DEVELOPER HELP ADMI	1
Canasas Anna Exporer Content Nanagement Content Management Samay System Samay System Samay	Destbeard Areas Settings C Occupancy Dashboard Areas Stream_27 Stream_5	General Settings	12 HOURS LAST HOUR LW Please click on t	Coupany Dashbaard he Area/metrics to show/hide them No data to display	-	Enhies Enhies Folta Tetal		
	Start Date Time 2022-01-17T00:00:00	Area Name Area 1	Current Interval 2022-01-17T15:24:00	in 8	Out 3	Delta 5	Total 5	
Jan 17, 2022 3:30:27 PM			All rights reserved to V	lisights solution itd. Copyright © 2015-2020.	Version 2.1.0.8 - production_20210308_wise2	_tf22_gs14 cf369aeb		

Area Settings

1. Add a new Area Name - e.g. Airport

\odot	OCCURANCY	DEVELOPER HELP ADMIN
Glasses	Dashbaard Avaa Satlings Conversi Settings Set properties of Area	
Â. Alarms	Occupancy Areas Settings	
Fictorer	Areas	
Occupancy		
Vehicle Counting		
Content Management		
्रि System		
Settings	All rights reserved to Weights colution 1kt. Capyright © 2015-2020. Version 2, 1, 0, 8 - production_202103081_whick2_052_014 <3560web	
System Monitor		
Jan 17, 2022 4:15:07 PM		

2. Under the New Area Name, click on the Three dots icon

\odot	оссияноч	DEVELOPER HELP ADMIN 💄
Glasses	Dashboard Areas Settings General Settings	
لِيُ Alarms	Occupancy Areas Settings	
• Explorer		
Cocupancy	Areas 🛨	
Vehicle Counting	- August : + Add Sub Area G' Update Area	
Content Management	X Delete Area	
्रि System		
Settings	All rights reserved to Visights solution Bd. Cxpyright @ 2015 2020. Version 2.1.0.8 - production_20210308_wite2_I02_gs14 cd369aeb	
System Monitor		
Jan 17, 2022 4:16:22 PM		

 Add your Sub-Areas - e.g. Main Hall & choose the associated video stream - e.g. Stream_27

Set properties of Sub Area		
Please enter sub area name below Main Hall	←	
Please select camera from the list		
Stream_28 Stream_12 Stream_22 Stream_5 Stream_14 Stream_17 Stream_2 Stream_20 Stream_27 Stream_23		•
Stream 24		
Stream 8		*
	SAVE	CLOSE

4. Click on Save



General Settings

The user can configure 3 main settings on the occupancy application:

1. Enabling Occupancy Application

A simple toggle button controller to either enable or disable the occupancy application for the specific running wise instance.



2. Start of Day

Defining when the day starts - at the defined hour, the application initializes the amount of detected people in the area (both "INs" and "Outs", starting the count again from zero.

\odot	OCCURINCY	DEVELOPER HELP ADMIN	L
Classes Classes Alarms	Dashbeard Areas Sattings Occupancy General Settings	Enable of Disa Occupancy	bie
Explorer	Start of day: The application all enable to set the start of day hour. At this hour the application rests the number of persons in the area to sere, and dants counting the persons.	M SA	VE
Vehicle Counting	Bucket of time bucket of time, works in the segregated 60 minutes Rules of time, 50 minutes		
Content Management System Settings System Manator	All rights reserved to Visights solution Bt. Copyright © 2015-2020. Version 2.1.0.8 - production_20210308_visie2_022_git4 ct306eeb		
Jan 17, 2022 4:23:12 PM			

3. Bucket of Time

Defining the period of time which the count get aggregated



5 - Vehicle Counting

The Vehicle Counting application allows the system to detect and count the amount of vehicles crossing a virtual line. The static virtual yellow line is plotted on the video stream - enabling the system to keep track on the amount of vehicles crossing threshold.

Prerequisite Dashboard Area Settings General Settings

Prerequisite

- Make sure that you have set-up a static yellow line in <u>Location</u> setting on the relevant camera stream
- Create a profile in the <u>System Settings</u> enabling Car_In / Car_out Events

Dashboard

The dash board tab is divided into three sections:

- **Time Filtration Tool** for the vehicle Counting Report allows the user to filter out the report according the following options: 7 days, 24 hours, 12 hours, last hour or a live view
- CSV Export Button allowing the user to export the below meta data table of the report

• Meta Data Table - includes all of the relevant Vehicle Counting Report information.

\odot	VEHICLE COUNTING	DEVELOPER	HELP ADMIN 💄
Classes	Dashboard Areas Settings General Settings		
Ģ _{Alarms}	Vehicle Counting Report		
Explorer	7 DAYS 24 HOURS 12 HOURS LAST HOUR LIVE		
	Found records found		
Vehicle Counting	Start Interval End Interval Sub Area Date : Time Area Name : Name	Vehicle Type :	Entries o
People Estimate			
Content Manageme Jan 31, 2022 8:39:32 PM	All rights reserved to Viisights solution ltd. Copyright © 2015-2020. Version 2.1.16.0_1 - production $2.1.16.0_{-}$	tion_5.1.1.2.0_2_develop	bf3feac2

Area Settings

1. Add a new Area Name - e.g. Airport

\odot			DEVELOPER HELP ADMIN
Glasses	Dashboard Areas Settings General Settings	Set properties of Area	
Âlarms	Occupancy Areas Settings	Please enter area name below Arport	
*K Explorer	Areas	SAVE CLOSE	
Occupancy			
Counting			
Content Management			
System Settings		All rights reserved to Volgehis solution Bit. Copyright 6 2015-2020. Version 2 1 0.8 - production_29270208_wine0_1922_pt;14 c0368win	
System Monitor			
Jan 17, 2022 4:15:07 PM			

2. Under the New Area Name, click on the Three dots icon

\odot	OCCURANCY	DEVELOPER HELP ADMIN
Classes	Dashbeard Areas Settings General Settings	
لِ Alarms	Occupancy Areas Settings	
•FK Explorer		
Cocupancy	Areas +	
Vehicle Counting	Add Sub Area G Update Area	
Content Management	X Dekte Area	
i System		
Settings	All rights reserved to Visights solution Rd. Copyright @ 2015-2020. Version 2.1.0.8 production_20210308_wise2_t122_gs14 ct386aeb	
System Monitor		
Jan 17, 2022 4:16:22 PM		

 Add your Sub-Areas - e.g. Main Hall & choose the associated video stream(s) e.g. Stream_27

Set properties of Sub Area			
Please enter sub area name below Main Hall	¢		
Please select camera from the list			
Stream_28 Stream_12 Stream_22 Stream_5 Stream_14 Stream_17 Stream_2 Stream_20 Stream_20 Stream_27 Stream_23 Stream_24 Stream_9			•
		SAVE	CLOSE

4. Click on Save



General Settings

The user can configure 3 main settings on the occupancy application:

1. Enabling Vehicle Counting Application

A simple toggle button controller to either enable or disable the occupancy application for the specific running wise instance.

\odot	OCCUPANCY	DEVELOPER HELP ADMIN 🚨
Classes	Dashboard Areas Settings General Settings	Enable or Disable Occupancy
لِيُ Alarms	Occupancy General Settings	
Fiplorer	Start of day: The equivalent wave the start of day hour Al this hour the application rests the number of persons in the area to zero, and darts counting the persons.	H SAVE
Vehicle Counting	Ducket of time Land of time, your which we work will be appropried 60 minutes Exoted of time, 50 minutes	
Content Management	All rights reserved to Visispits solution Rd. Copyright © 2015-2020. Version 2.1.0.8 - production_20210300_visie2_3/22_ps14 ct366aeto	
्रि System Settings		
System Monitor		
Jan 17, 2022 4:23:12 PM		

2. Start of Day

Defining when the day starts - at the defined hour, the application initializes the amount of detected people in the area (both "INs" and "Outs", starting the count again from zero.

\odot	оссияноч	DEVELOPER HELP ADMIN
Classes Classes	Dashbeard Areas Settings General Settings Occupancy General Settings	Enable or Disable Occupancy
Ficture Contract	Start of day: The application all evaluation to set the clorf of any hour AI this hour the application resis the anset to zero, and starts counting the persons.	H SAVE.
Vehicle Counting	Bucket of time Junit of the averts will be appropried 50 minutes Exited of time, 50 minutes	
Content Management © System Settings	All rights reserved to Visights solution Itd. Copyright © 2015-2020. Version 2.1.0.8 - production_20210308_witee2_tf22_gs14 cf368eeb	
System Monitor		
Jan 17, 2022 4:23:12 PM		

3. Bucket of Time

Defining the period of time which the count get aggregated



6 - People Estimate

The People Estimate application allows the system to estimate the amount of people during a customizable interval of camera footage. The application has various controls that allows the user to fine tone the people estimation amount in the video stream.

Prerequisite Dashboard Stream Settings General Settings

Prerequisite

• Make sure that you added the "People_Counting" class under the "scene" class type in your camera/stream's profile

Dashboard

The dash board tab is divided into three sections:

- Upper controllers allows the user to filter out the different stream lists, collapsing them and pausing/ initializing the live analytics
- Legend information provides a visual color code manifestation of the analytics
- **Timeline tool** allows the user to change the 24 hour period of the analytics through a range
- Analytics Table Provides a bar visual indication of the people estimate measurement as a function of the time

\odot	PEOPLE ESTIMATE							DEVELOPER	R HELP A	DMIN 👤
Â Alarms	Dashboard Stream Settings General Settings				_					_
•7/A Explorer					Search S	ite		Q COLLA	PSE ALL	AUSE
Cccupancy	Legend: Low Medium High No d	ta 📕								
Vehicle Counting	From Time Mar 06, 16:53			Working window				Ма	1 ar 07, 15:53 - Mar 07	b Time 7, 16:53
	For_Nitsan									~
Servers	Begining_of_fight Continuation_Of_Fight tourist205									
Content	Fight_Including_Arrest	01.31 20.31	16.15	16.20	6.25 16.20	16.25	16:40	16.45	16.50	
Management	15.55 10.00	10.02	10.13	10.20	10.50	10.05		10.12	10.20	
System Settings										
Mar 7, 2022 4:53:28 PM		All rights reserved to	Viisights solution Itd. Copyright 6	0 2015-2020. Version 2.1.1	8.0_0 - production_5.1.3.2.	0_0_develop ecd3cf40				

Stream Settings

The stream settings tab allows the user to define and add cameras to the people estimate analytics

- 1. Add a new Area Name e.g. Airport
- 2. Under the New Area Name, click on the Three dots icon

\odot	OCCURRINGY	DEVELOPER	HELP	
Gammer	Dashboard /Area: Settings General Settings			
ل Alarms	Occupancy Areas Settings			
Frederic Explorer				
Оссирансу	Areas 🛨			
Vehicle Counting	Autorit : + Add Sub Area G' Update Area			
Content Management	K Delete Area			
्रि System				
Settings System Monitor	All rights reserved to Visights solution Bit. Copyright 6 2015 2020. Version 2 1.0.8 - production_20210308_witee2_U22_gs14 cD95betb			
Jan 17, 2022 4:16:22 PM				

 Add your Sub-Areas - e.g. Main Hall & choose the associated video stream(s) e.g. Stream_27

Set properties of Sub Area			
Please enter sub area name below Main Hall	¢	_	
Please select camera from the list			
Stream_28 Stream_12 Stream_22 Stream_29 Stream_14 Stream_17 Stream_20 Stream_20 Stream_27 Stream_23 Stream_23 Stream_24			•
Stream 8			*
		SAVE	CLOSE

4. Click on Save



General Settings

The user can configure 3 main settings on the occupancy application:

1. Enabling the People Estimate Application

A simple toggle button controller to either enable or disable the people estimate for the specific running wise instance.

\odot	PEOPLE ESTIMATE	DEVELOPER HELP ADMIN
لِمُ Alarms	Danhoard Stream Settings General Settings	
•Fr Explorer	People Estimate General Settings	\longrightarrow
Occupancy	- Bucket of time	H SAVE
Vehicle Counting	Austral fines, sore state the events and the suppresent	
L. People Estimate	All rights reserved to Visights solution Itd. Copyright @ 2015-2020. Version 2.1.18.0_0 - production_5.1.3.2.0_0_develop ect3cH9	
Servers		
Content Management		
्रि System Settings		
Mar 8, 2022 11:41:41 AM		

2. Bucket of time

Defining the interval time of each analytic monitoring segment - e.g. of the bucket time equals to 1 minute, then the system will output the people estimate legend in the timespan of one minute.

\odot	PEOPLE ESTIMATE	DEVELOPER HELP	ADMIN 💄
لِمُ Alarms	Dab/board Stream Settings General Settings		
*K Explorer	People Estimate General Settings		
occupancy	Bucket of time		H SAVE
Vehicle Counting	Locki of dime, one which he events will be appropried I minutes Item in the events will be appropried Buckle of time, it minutes Item in the events will be appropried		
L People Estimate	All rights reserved to Visight's solution 8d. Copyright © 2015-2020. Version 2.1.18.0_0 - production_5.1.3.2.0_0_develop ecdDic40		
Servers			
Content Management			
्रि System			
Seargy Mar 8, 2022			
11:45:06 AM			



7 - Servers

Functionality Adding Nodes Analytics Engine(s) Server Related Actions

Functionality

- This Server tab functions as the node management for all connected nodes.
- At the left top of the screen, you can find the information concerning the IP addresses and ports of the master DB & Master Redis servers.



\odot	CLUSTER SERVER	
لِکْ Alarms	Master DB Server: 192.168.1.20 Master Redis Server: 192.168.1 Found 2 nodes	0:4306 .20:4379
Servers	Server name ¢	Server URL

Adding Nodes

• To register a new server node, click on on '+' icon at the right top side of the screen



• The following window will pop up, input the server's data infomration

- Input node name
- Input the URL (including port number)
- Click on the 'SAVE' button.

Server Name		
Enter Server Name		
Server URL		
http://192.168.8.23		
Notes		
Notes		

- The registered servers will appear In the Server's tab, along with the following infomration:
 - The server name
 - The server's URL
 - The server's Analytics Engine's (GPUs) status
 - The server's status.

CLUSTER SERVER						HE	LP WISE 💄
Master DB Server: 192.168.1. Master Redis Server: 192.168 Found 2 nodes	20:4306 1.20:4379				Search		Q +
Server name ¢	Server URL			Analytics Engine(s) Status		Server Status	Actions
QA_1	http://192.168.1.20/	0 GPU GeForce RTX 2080 Status: READY Utilization 0/5	1 GPU GeForce GTX 1080 Status: NA Utilization 0/5			ONLINE	÷
QA_2	http://192.168.1.20.9109	0 GPU GeForce RTX 2080 Status: NA Utilization 0/3	1 GPU GeForce GTX 1080 Status: READY Utilization 2/3			OFFLINE	**
	CLUSTER BERVER Mester DB Server: 192.168.1 Mester DB Server: 192.168 Fond 2 nodes Fond 2 nodes	Security Server 192.168.1.26.406 Master Redis Server 192.168.1.26.4379 Found 2 hode Server name 2 Server URL Q4_2 http://192.168.1.20 / 109	Security 2008 Server: 192:168.1.20-X306 Matter Red Server: 192:168.1.20-X379 Found 2 notes: Server name : Server UBL Out_1 Negr/192:168.1.20 Out_1 Negr/192:168.1.20 Out_2 Negr/192:168.1.20 9109	CLUSTER SERVER Matter Red Server 192.168.1.26.379 Server 108.0 Colspan="2">Colspan="2"Colspan=	Security Securit	CLUSTER SERVER. Server 192 - 122-122 <th colspan="2</th> <th>CLUSTER SERVER. Server Se</th>	CLUSTER SERVER. Server Se

Analytics Engine(s)

The analytics Engine(s) Status, shows available GPUs per server. Each GPU box displays the following information:

- 1. GPU's model
- 2. GPU's status
- 3. GPU's utilization



Server Related Actions

• By clicking on the three dotted menu, it is possible to perform various actions.

\odot	CLUSTER SERVER						HE	LP WISE	1
Alarms	Master DB Server: 192.168.1. Master Redis Server: 192.168 Found 2 nodes	20:4306 :1.20:4379				Search		Q	+
Servers	Server name ¢	Server URL			Analytics Engine(s) Status		Server Status	Action	s
Content Management	QA_1	http://192.168.1.20/	0 GPU GeForce RTX 2080 Status: READY Utilization 0/5	1 GPU GeForce GTX 1080 Status: NA Utilization 0/5			ONLINE		
Settings	QA_2	http://192.168.1.20.9109	0 OPU GeForce RTX 2080 Status: NA Utilization 0/3	1 GPU GeForce GTX 1080 Status: READY Utilization 0/3			OFFLINE	:	

The following Actions can be implemented:

1. Edit Server meta data information - allowing the user to edit the server name & server URL.

Edit Server		
Server Name		
QA_1		
Server URL		
http://192.168.1.20/		
Notes		
Notes		
	SAVE	CANCEL

b. Configuring GPU infomration - allowing the user to modify streams per GPU and selecting which GPU to utilize

[QA_1]: Configure Server GPU		
Streams Per GPU Slide the slider to set the number of streams to use per GPU 0 min 2, madmum 15		
Available GPUs Select GPUs to use from the list below		
0: GeForce RTX 2080 1: GeForce GTX 1080		
_		
	SAVE	CANCEL

- c. Clicking on 'Restart GPU' allowing the user to restart the Analytics Engine(s) (GPUs)
- d. Clicking on 'Delete' allowing the user to remove the server from the cluster.



8 - Content Management

Main Page **Register a video stream** Status of Video Streams Additional Indicators General Tab Define General tab settings Location Tab Drawing a Polygon Polygon Types Junction Attention Exclusion Zone Loitering Occupancy Tab Setting up the occupancy location Thresholds Tab Meta Tab Preview Tab

The Content Management displays a list of available video stream registered into the system. With this the user can configure the system behavior's for specific video streams, as described below.

Main Page

Register a video stream

- Click on the "+" button located on the right top corner of the window
- 2. A popup window appears

- 3. Input the Camera ID
- 4. In the **URL** field, enter either the public camera URL or the video URL
- 5. In the **Name** field, enter a title for the video stream
- 6. In the **Site** field, enter the site name
- 7. Click **REGISTER**

	DEVELO	PER HELP	
Search	_		+ :
me ¢	Status ¢	Message ¢	Up
	~		
Register Camera			
Camera ID *			
Enter Camera ID			
URL *			
Enter Camera URL			
Name			
Camera name			
Site			
Site			
		05010	

8. The status of the video changes to **Registered**.

Note - the Camera ID designation should only consists of letters, numbers , underscores and dashes. Other characters will not be applicable

Note – When using a user-password protected URL, make sure you are not using special characters, such as "@"

To delete a camera, click on the 3 doted menu and select the **Delete** option

Status of Video Streams

The **Content Status** column shows the status of this video stream in the system.

Status	Description
PENDING	A video stream has been registered to the system and is waiting to be started
INITIALIZING	This is a temporary status, after a stream has been started it will automatically changes to RUNNING

Status	Description
RUNNING	The video steam is being loaded and processed by the system. A live stream displays as RUNNING until it is stopped
STOPPED	A command has been given to stop the video stream
COMPLETED	A video file from a video store has completed processing by the system
FAILED	The video stream failed to be processed - in this case contact Viisights

Additional Indicators

The top-left corner shows the stream's status:

- Running
- Failed
- Stopped.

To start the video stream

- Click on the 3 dotted icon and then click on **Start**
- The Status tab displays RUNNING

To stop the video stream

• Click on the 3 dotted icon and then click on **Stop**.

Starting and stopping multiple video streams

• The user can start or stop multiple streams at the same time by selecting the streams and then clicking the 3 dotted button at the top-right corner.

Disabling a video stream

• Click the 3 dotted button and select the **DISABLE** option to stop the stream from running. The stream will not start automatically after a server restart



General Tab

1

To get into the general tab of a specific stream, click on the 3 dotted button and then click on **Settings**.



The **General** tab enables the user to define the settings of an existing video stream.

Define General tab settings

1. Input the following settings fields:

Input Field	Description
Camera ID	Displays the unique identifier assigned to this video stream during registration. This value cannot be changed here. The Camera ID can be changed, but only after the stream or video is finished or has stopped.
Camera Name	Displays the camera name used for UI presentation. Can be different from the Camera ID
Classes Profile	Displays the profiles of the classes. It is possible to view and modify the profiles that the user created with the relevant classes. If no unique profiles were created, the DEFAULT profile is chosen and displayed automatically.
Stream URL	Displays the URL video stream as defined in registration. This value cannot be changed here. The Stream URL can be changed, but only after the stream or video is finished or has stopped.
Site	Displays the site name
RTSP Setting	Displays the relevant communication protocol associated with the RSTP.
Short Description [Optional]	Additional information to appear as a short description of this video stream
Long Description [Optional]	Additional information to appear as a long description of this video stream

Location Tab

The **Locations** tab enables the user to draw a static polygons on to the video stream. The polygon's area is essentially an area of detection. there are several types of detection polygon that can be enabled:

- Junction
- Attention
- Exclusion
- Zone
- Loitering
- Car Zone

For example, this definition can be used as a geo-fence, so that events can be triggered when an object enters or exits this geo-fence.

Note that the polygon shape must be closed

Drawing a Polygon

- 1. Click on the image to create the first polygon segment
- 2. Continue to click on the image to create additional coordinates of the polygon
- 3. Finalize the polygon by clicking on the first polygon segment



Make that no line overlaps with another line when establishing the polygon

Polygon Types

Junction

The junction polygon defines an area within the video stream as a road junction.

This feature allows the User to enable detections related to junction, such as:

- Car stopping in junction
- Car collision

Camera Regions Settings Draw Areas of interest for event detections based on location



Attention

The Attention polygon defines an area within the video stream where all detections will **<u>only</u>** be generated in that specific location.

Camera Regions Settings

Draw Areas of interest for event detections based on location



Exclusion

The exclusion polygon defines an area within the video stream, where all detections are excluded and will not be detected.

Note that areas which were **<u>not</u>** excluded, will still provide general detections

Camera Regions Settings

Draw Areas of interest for event detections based on location



Zone

The Zone polygon defines an area within the video stream as a special zone.

This feature allows the User to enable detections related to zone, such as:

- PERSON_GETS_INTO_ZONE
- PERSON_GETS_OUT_FROM_ZONE
- CAR_GETS_INTO_ZONE
- CAR_GETS_OUT_FROM_ZONE





Loitering

The Loitering polygon defines an area within the video stream, detecting situations where people are conducting loitering behavior.

Loitering = when a person stands or waits around idly without any apparent purpose.

Camera Regions Settings

Draw Areas of interest for event detections based on location



When defining a time range, note that it should be according to the server time on the lower-left side

Make sure you click on the save button when creating any polygon

Occupancy Tab

The Occupancy Location tab allows the user to draw a yellow line within the video stream, functioning as a threshold. The line consists of an arrow which indicates the direction:

- "IN" is considered as the direction of the arrow
- "OUT" is considered the opposite direction of the arrow

This line is used to provide live and an aggregated history reports on area occupancy, by counting people entering and leaving the area.

Setting up the occupancy location

- 1. In the image, click on the position where you would like to start setting the Occupancy line, keep dragging the line to the required position until you have finished defining it.
- 2. Set the direction of the arrow using the "Toggle Direction" button



An individual crossing the line towards the direction of the arrow will be considered as **PERSON_IN**, while a person crossing the line in the opposite direction will be considered as **PERSON_OUT**



Make sure you click on the save button when creating the Occupancy line

Thresholds Tab

The Threshold tab enables the user to adjust proximity (distance) between persons to determine whether or not they belong to a group.

This proximity can be adjusted using two independent factors which multiply the distance and can be adjusted separately.

Input Range	Description
Phfactor	Factor which classifies the oval parameter of an object
Hfactor	Factor which determines the distance between objects

Proximity may need adjustments due to the viewpoints (Angles) of the camera.

The default value of the factors is set to 1.0 and the user can increase or reduce it by 80% (From 0.2 to 1.8). After making the adjustments click on **SAVE** button.

Alarms Cla	ass Threshold	S		+	H SAVE
Class Name PERSON	Property Name phfactor	Threshold	Action		
PERSON	hfactor	1.00			

The **Threshold** tab also enables the user to set or change the level of detection accuracy in attributes.

Click on + button to add a new threshold. Then, select the preferred attribute from the dropdown list and set the threshold number.

Click SAVE.

The user can add multiple attributes from the list.

Click the following icon to remove a threshold from the list.

Meta Tab

The **Meta** tab enables the user to add different data and parameters concerning the video, such as –

- Define daytime hours.
- Select the camera motion still, ptz, zoom in, zoom out.
- Select the video type rgb, ir, ir-rgb.
- Select the camera point of view street view, aerial_90, aerial.
- Select the camera location indoor, outdoor, none.
- Select the **Video Quality** low, medium, high.

tatas. oon	IPLETED				
General	Locations	Occupancy Location	Thresholds	Meta	Preview
Camera	Meta				
Day Time					
07:00	- 18:00	×			
See the came	ra hourly previews	in Preview tab to set the time			
Motion					
		~			
Type					
		~			
Point Of Vi	ew				
		*			
Location					
Point Of Vi	ew	~			
Location					

Preview Tab

The Preview tab shows an image thumbnail for every hour from the specific video stream





Classes Tab Introduction Creating a new profile Modify an existing profile Configuring alarms Deleting an existing profile Additional Classes Settings Hazard detection Object Abandonment -Alarm Tab Alarm Settings Alarm Toggle Button Processing Unit Tab Advance Detection Settings Analytics Engine Settings Group Size Settings Define streams & GPU settings Status of the Analytics Engine Retention **Define Retention settings** Connector Tab Configuring VMS connectors: Milestone: Genetec Cayuga: SMTP Alerts:

Classes Tab

Introduction

The Classes tab allows you to enable or disable the classes that the system detects.

This includes the following:

- Objects & attributes
- Actions
- Events

The system provides a predefined list of classes that is based on the user's license. In this tab, you can define several profiles. Each profile defines the classes to be detected, afterwards simply add the relevant video sources to each profile.

For example, unchecking the **CAR COLLISION** event means that the specific profile will not include the car collision detection.

۲	SHIFTEN SETTINGS					DOM:OFT HER HERE
1 10	System Settings	Relation Controllers				
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11 • 11 •	mail_const_senty groups_senty editors_senty fador_senty fador_senty fador_senty fador_senty groupsenty directioners fador_streams	(unit Class) Coal Converting A, and Coal Coal Conversion Coal Conversion Coal Conversion Coal	CALCOM CALLORE CALLORE CALLORE CALLORE CALLORE SERVICELORE SE	^	Added Gauss Broch - Entrol A, 1000000 Gaular J, Camero A Anna A, Camero A Anna A, Camero A Anna A, Camero A Anna A, Camero A	- 200
Mar 20. State 17.2 Fed		BLECT END END		< < < > > >		

Creating a new profile

- 1. Click the ADD button in the left column
- 2. Input a custom $\ensuremath{\text{Profile Name}}$ and a $\ensuremath{\text{Description}}$
- 3. Click SAVE.

_					
\odot	SYSTEM SETTINGS				DEVELOPER HELP ADMIN
() Chansen	System Settings	System Pr	ofie		
4. 	Classes Alarms Processing Unit	Relation Connectors Camera Connector Profile Name			
r∰ Colorr	Search x + ADD	Description This is a n	ew Profile		🖗 🔒 💾 save
Conserver	Super_profile	System Classes		invers	M dama
United of Counting	Al_Event_Only Al_Objects_only	BRAM. CAR_GETS_INTO_ZONE	52/JF	CHARTE	
Content	Al_Actions_Only Hallway	CAR_ON CAR_ON CAR_OUT	PERSON_WALKING	hazed_autoor	
<u>ې</u>	Hallway_stream_4 Vehicle_counting	CAR_STOPPING_IN_LUNCTION CAR_COLLISION GATHERING	LOTERING MOTORCYCLE_MOVING MOTORCYCLE_STOPPING	tre_tectory hazard_appearance_foam	
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Monitor		CROWD CROWD CRUECT_ABANDONMENT RECOVER DESITION	PERSON_BROWG_MOTORCYCLE PERSON_THROWING_OBJECT		
		PERSON_GETS_INTO_ZONE PERSON_GETS_OUT_FROM_ZONE			
Jan 17, 2022 5:06:52 PM		PERSON_IN PERSON_OUT PROXIMITY			

- 4. While the Profile is selected, Check the relevant Events, Actions and Objects you want to include in the profile
- 5. Click the Save button

\odot	SYSTEM SETTINGS						DEVELOPER HELP ADMIN
÷							
Classes	System Settings						
Δ							
Alarma	Classes Alarms Processing Unit	Retention Connectors Camera Connectors					
-≪ Explorer	Search 🗙 🕇 ADD	New_Profile					i Hiske
	default						
Occupancy	Super_profile	There are no classes attached to the profile. Add at least one of	lass to save the profile!				
[2]	All_Event_Only	-					
Venicle	All_Objects_only	System Classes			~	Hached Cameras	
Counting	All Actions Only	EVENT	ACTION ACTION	∧ OBJECT	^	Search	× + ADD
đ	All_Actions_Only	BRAWL	CAR_MOVING	EAG	~		
Content	Hallway	CAR_GETS_INTO_ZONE	CAR_STOPPING	BICYCLE		No Cameras	
Management	Hallway_stream_4	CAR_GETS_OUT_FROM_ZONE	PERSON_RUNNING	CAR	~		
愈	Mahida assettas	CARUN	PERSON_STOPPING	110.			
System	venicie_counting		PERSON_WALKING	MOTONCYCLE	× I		
Settings	Marketing	CAR_STOPPING_IN_SUNCTION		PERSON UNING ON FLOOR	× I		
2	New Profile	CATHERO		PERSON_CHING_ON_PEODOR			
System		GROUP	PERSON ENLING	awowe			
Monitor		PERSON GET INTO CAR	PERSON STARFING		_		
		PERSON OFT OUT FROM CAR	PERSON REDING RECYCLE		_		
		CROWD	PERSON RIDING MOTORCYCLE		_		
		OBJECT. ABANDONMENT	PERSON_THROWING_OBJECT		_		
		PEOPLE FIGHTING			_		
		PERSON_GETS_INTO_ZONE					
		PERSON_GETS_OUT_FROM_ZONE					
		PERION_N			_		
		PERSON_OUT			_		
		PROXIMITY			_		
			All rights reserved	to Wisights solution ltd. Copyright @ 2016-2020. Version 2.1.0.8 -	production_20210306_s	Albe2_ff22_gs14 df109aeb	
Jan 17, 2022							
5:00.14 PM							

6. While the Profile is selected, click on the ADD button to apply the profile detections on specific video streams

\odot	SYSTEM SETTINGS						DEVELOPER HELP ADMIN
⊕ ⊒ 4	System Settings	Retention Connectors Camera Connectors					
·∰ Eqtow	Search 🗙 🕇 ADD	New_Profile					👔 📋 🗎 Swe
^	default Super profile	System Classes				Attached Cameras	
	All_Event_Only All_Objects_only	EVENT BRAVL CAR_GETS_INTO_ZONE	ACTION CAR, MOVING CAR, STOPPING	A OBJECT BAG DICYCLE	~	Starch.	× + 400
Curdent	All_Actions_Only Hallway	CAR_GETI_OUT_FROM_ZONE	PERSON_RUNNING PERSON_STOPPING PERSON_WALKING	CAR FIRE MOTORCYCLE	Ŷ		
içi System	Hallway_stream_4 Vehicle_counting	CAR_STOPPING_IN_JUNCTION CAR_COLLISION GATHERING	LOTERING MOTORCYCLE_MOVING MOTORCYCLE_MOVING	VERSON_LYING_ON_FLOOR	a v		
System By System Maritar	Manating New_Profile		C PERSON JALLAN				
Jan 17, 2022 5:12:10 PM			Al rights reserved to Via	sights wolklon Iki. Copyright & 2015-2020. Vension	12.1.0.8 - production_202103	til junit, fill ju i dilline	

7. Select the relevant video streams and click on the Add button



8. Click on the Save button to finalize the process

Modify an existing profile

1. Select the relevant profile you want to modify
- 3. Locate the relevant EVENTS, ACTIONS and OBJECTS you wish to add/remove
 - To enable the detection check the relevant selection
 - To disable the detection uncheck the relevant selection
 - By default, all options appear with a checkmark
 - Objects that contain attributes will have a vertical grey arrow on the right hand side of the option, e.g.



When clicking the arrow, this displays the attributes. Note that these options can also be unchecked –

~	CAR		^
	~	COLOR	\sim
	~	TYPE	\sim

If some of the attributes are selected and others are not, then the object appears with a black checkmark. e.g.

1	PERSON			
1	AGE	~		
- I	COLOR	~		
1	ТУРЕ	~		
1	VIOLENCE	~		
1	ACCESSORIES	\sim		

4. Click the SAVE button.

Configuring alarms

1. Hover over the right side of a class name and then click the gear icon - the following will display:

0.0055 (581107						
CAR_MO	ING					
Alarm Setting	c					
Expose	iutside as	Alarm				
Priority						
						~
Category						
						~
Note: The e	clusion tim	e should be a	eccording to the Serv	er time Van 13, 2	022 11.02:04 AM	
Class Exclude	nd Sme when	the class will be	e excluded			
Derect Start and L						

2. Check the "Expose outside as Alarm" check box

Alarm Settings: Expose outside as Alarm •

3. Adjust the time slider to set the alarm threshold.

Alarm threshold Side the time slider to set th	e threshold	
10 Seconds		

- 4. Choose the priority of the alarm
- 5. Choose the category of the alarm
- 6. The user can exclude a class during a defined time range by setting the time frame

OK .	CANCEL
UR.	CREACEL

Attributes cannot be excluded using the time frame

Note the time range must be set according to the server time at the lower-left side.

Deleting an existing profile

To delete an existing profile and redirect the video sources back to their default location

- 1. Click the **DEFAULT** group, add the video sources that you want to redirect and click **SAVE**.
- 2. Click the profile that you want to delete and then click the trash icon.

\odot	SYSTEM SETTINGS					DEVELOPER WISE
Q. Alarra ₩	System Settings Classes Alarms Processing Unit	Relation Connectors				
Content Kanagement	Search 🗙 🕇 ADD default	D_tast				M 🔒 H save
ŵ	Fire	System Classes			Attached Cameras	
System Settings	Office	EVENT	ACTION	^	Search	× + ADD
	Traffic	CAR_ON_SIDEWALK	CAR_MOVING		7 Eleven Armed Robberv 2018 cut2	
22	Traine.	CAR_STOPPING_IN_JUNCTION	CAR_STOPPING PERSON RUNNING		knile sobben/7rost1	
Monitor	Shop	PERSON GET INTO CAR	PERSON_STOPPING		1 APD Debases Miss of Implex Store Maint and	
	vlad_test	PERSON_GET_OUT_FROM_CAR	PERSON_WALKING		Dero_nakases_volio_or_anwaiy_some_mest_cart	
	D_tast	OBJECT_ABANDONMENT	MOTORCYCLE_MOVING			
		PEOPLE_FIGHTING	MOTORCYCLE_STOPPING			
		VEHICLE_ON_SHOULDER	PERSON_FALLING			
		VEHICLE_MOVING_ON_SIDEWALK	PERSON_STABBING			
			PERSON_RIDING_BICYCLE			
			PERSON_RIDING_MOTORCYCLE			
			PERSON_THROWING_OBJECT			

Note – Changes made in the **Classes** tab only take effect after you stop and then restart the video streams using the API.

The settings defined here affect the functionality of the entire system.

CAR_MOVI	NG					
Alarm Settings:						
Expose ou	tside as Ala	rm				
Priority						
						~
Category						
						~
Note: The exc	lusion time s	hould be accordin	a to the Server t	ime 'Jan 13, 2022	2 11:02:04 AM	
10001 110 0.0		nouro de accordar	g to the Gerrer i	110 001 13, 2022		
		alasa odi ba sosioda				
Class Exclude:	Ence other des	class will be exclude	0			
Class Exclude: Select Start and End	time when the	End	×			

Additional Classes Settings

Hazard detection

Hazard definition -

The Hazard class is a special detection mechanism which allows the system to record various abnormal objects entering the field of vision, mainly, by observing the background during a predefined period of time which creates a "steady" profile of the surrounding.

In ideal conditions, the background learning period should be substantially long, so that any short temporary changes in the background, will not be considered as actual detections.

An authentic Hazzard detection will occur, when there is a genuine significant vista change in the background, mainly in terms of size and presence.

Example for use cases for Hazard detection:

- A pieces of furniture placed on the street during an undesignated collection day
- A hazard situation within a factory such as an obstacle or oil stain

hazard detection logic:

When an object larger than the <object_Size> appears in the scene for approximately the <Foreground_Appearance_Time> a Hazard detection triggers. The hazard will be signaled for at least <Foreground_Appearance_Time> (continuously evaluated every <Foreground_Appearance_Time>).

Hazards settings system parameters can be configured in the following location settings \rightarrow HAZARD class configuration:

$\leftarrow \rightarrow$	C A Not secure 192.168.1.32/#!/system-setting:	s/classes		
\odot	SYSTEM SETTINGS			
		BRAWL	CAR_MOVING	11-10-00
Ϋ́,	· · · · · · · · · · · · · · · · · · ·	CAR_GET		Hallway
Alarms		CAR_GET	Class Settings	
		CAR_IN		
**		CAR_OUT	Start – End 🗙	
Explorer		CAR_STC		
		CAR_COL		
Occupancy		GATHERI	EXTRA PARAMETERS	
_		GROUP	Force BG learn now	
		HAZARD	Background duration learning	
Vehicle		PERSON	20 Seconds	
Counting		PERSON	Foreground duration learning	
52		CROWD	20 Seconds	
People		OBJECT_	Object minimal size	
Estimate		PEOPLE_	0.11	
		PERSON	Similarity Threshold	
Servers		PERSON	0.4	
Contrast		PERSON	Saturation threshold	
đ		PERSON	1	
Content		PROXIMI	Hazard Keep Alive Threshold	
Management		CENE	0.7	
ា	3	CENE	Foreground Pixel Value Distance	
System		PEOPLE_	0	
Settings			Foreground Window Presence Threshold	
Apr 20, 2022			0.7	
12:50:25 PM			Ignore detected objects	
			040	A

UI Name	UI Tool Tip
Force BG learn now	Force background learning process
Background duration learning	Time to learn the Background in seconds
Foreground duration learning	Time to learn the Foreground in seconds
Object minimal size	Percentage of object area out of frame
Similarity Threshold	Hazard candidate similarity confidence. The higher the confidence threshold, the more candidates will be marked as Hazard.

UI Name	UI Tool Tip
Saturation threshold	The ratio between the number of pixels in a given foreground frame that differ from the background (based on Foreground Pixel Value Distance) and the total number of pixels in a frame. If the ratio is above Saturation threshold then a force background reset is performed.
Hazard Keep Alive Threshold	Hazard keep similarity confidence. The higher the confidence threshold, the harder it gets to maintain an ongoing hazard detection.
Foreground Pixel Value Distance	Significance level of pixel gray level value between a given foreground image and background image. Value range from 0 to 255. The lower the level is, the higher to tolerance for subtle differences.
Foreground Window Presence Threshold	The difference between Foreground frames and Background are accumulated over the time of the Foreground duration learning window (this is done for each frame and pixel based on Foreground Pixel Value Distance). The presence ratio defines the number of frames in which difference occurs out of the number of frames in the foreground window.
Ignore detected objects	Objects the are filtered out as hazards



Background resets automatically when updating <bg_duration_learning> or <fg_duration_learning> or by a manual request.

There are 2 additional cases where background reset is performed by force:

- (a) on going foreground frame differ from the background in ratio greater then Saturation threshold
- (b) embedded reset frames were encountered

Object Abandonment -

An abandon object is an unknow prop, similar to the hazard detection, dictated by the following criteria:

- 1. The prop is a stationary object
- 2. Initially a person is located in a predefined distance from the prop the event is detected.

- 3. The person is in close proximity to the prop, for a certain amount of time
- 4. The same person walks away from the prop

The logic of the detection is similar to the Hazard detection. In practice this means the a person carries an object, while the object is carried it is not detected, however, once the object is placed in close proximity to the same person, and it is stationary, the system start monitoring it as a potential candidate for object abandonment detection.

Once the system establishes that a given person is in close proximity to a certain stationary object, the system defines a parameter called "**person to object relationship**" which is monitored in seconds (od_person_hazard_relationship_num_seconds).

Once this information is assets, the system defines a distance parameter between the person and the object. If this parameter is greater than the defined distance for a period of time

(od_person_hazard_disconnection_num_seconds) an object abandonment alert is raised. Alert is raised for a predefined period of time (abandonment_keep_alive_num_seconds).

UI Name	UI Tool Tip
tracker body similarity threshold	Similarity confidence level based on person upper and lower body
tracker gradients similarity threshold	Similarity confidence level based on person contours
tracker spatial distance factor	Distance search area for person tracking. The larger it is the larger the search area is
association factor	Distance search area for linking hazard to a particular person. The larger it is the larger the linkage search area is
association number of seconds	Person to Hazard proximity duration
disassociation number of seconds	Person to Hazard disassociation duration
keep alive number of seconds	Number of seconds to keep the alert of abandonment on

Alarm Tab

Alarm Settings

There are situations in which multiple alarms can be triggered, due to the settings of the real-time events, such as a closed vicinity and adjacent time frames.

In order to avoid overwhelming the operator, the user can set up the parameters, merging the multiple alarms into a single alarm.

The alarm settings allows the user to set specific time and distance (percentage) parameters, combining events that will ultimately minimize multiple alarms into one alarm.

For example, if two events that intersect within 3.2 seconds and/or have a 30% intersection, they will be merged into a single alarm

Alarms Settings	i			
Percentage Intersect Slide the percentage slider to	To Combine Events o set data Intersect To Combine	Events		
30%				
0 disable intersection				
Intersection time To N Slide the time slider to set d	lerge Events ata Intersect To Merge Events by	/ Time		
3.2 Seconds				

Alarm Toggle Button

Use the toggle switch to enable or disable all alarms that were set up in the system.

\odot	SYSTEM SETTINGS	DEVELOPER	HELP	ADMIN 💄
Glasses	System Settings			
Alarms * Explorer	Alarms Settings			
Occupancy	Percentage Intersect To Combine Events Dies the preventage risker to and sharest To Combine Events			SAVE
Vehicle Counting	Intersection time To Marge Events Side a few and data Interset To Marge Events by Time 3.2 Seconds 0 disable intervention			
Management System Settings	All rights reserved to Visights solution Rd. Copyright © 2015-2020. Version 2.1.0.8 - production_20210308_wise2_tf22_gs14 ct369aeb			
System Monitor				
Ion 5, 2022				
Jan 5, 2022 12:22:36 PM				

Once disabled, the bell icon, which indicates that an alarm was set up, will appear as crossed in the classes screen.

System Settings

Classes	Alarms	Processing Unit	Retention	Connectors	
Search	3	ADD	default		
default					
			System C	lasses	
			V EVE	ENT 🔌 🦟	^
			\checkmark	CAR_STOPPING_IN_JUNCTION	
			\checkmark	CAR_COLLISION	

Enabling the alarms again will return the bell icon to the original status.

Processing Unit Tab

Warning - before conducting any changes in this section, make sure that you consult your solution expert

The processing units tab is divided into three distinct columns:

1. Advance detection settings

i

- 2. Steams and GPU settings
- 3. Analytics Engine status

Advance Detection Settings

Analytics Engine Settings

The following table includes the settings option with their description

Settings	Description
Apply Attention Before Tracker	?Ask Nitsan/Menash/Gaby?
Apply Exclusion Before Tracker	?Ask Nitsan/Menash/Gaby?
Apply Collision	?Ask Nitsan/Menash/Gaby?
Check if frame are freezed	?Ask Nitsan/Menash/Gaby?

I.

Group Size Settings

The system can classify 3 types of people clusters, setting them according to certain defined range of detected individuals:

- Group
- Gathering
- Crowd

Our default values are:

Group - between 3 to 5 persons Gathering - between 6 to 15 persons Crowd - 16 and above

Estima	ated Group Size		
3	5		16
0-	-0		
Estima	ated Gathering Siz	e	
6		15	19
0-		0	
Estima	ated Crowd Size		
9 1	16		100
	•		0

It is possible to adjust the sizes of all categories by specifying the lower and upper boundary.

If one of those categories has been adjusted, other categories will automatically change accordingly to avoid any overlapping ranges.

For example, if the category of **Gathering** is between 9 and 11 persons, **Group** will automatically be between 3 and 8 and **Crowd** will automatically be between 12 and 100.

Estimated	Group Size		
3		8	16
0		-0	
Estimated	Gathering	bize	
6	9	11	19
	-O -	-0	
Estimated	Crowd Size		
12			100
-0			0

The minimum difference between the low and high range of a category is 2 persons.

After making the adjustments click on the **SAVE** button.

Define streams & GPU settings

1. In the **Streams Per GPU** field, use the slider to specify how many video streams one GPU could support Side the slider to set it

Slide the slider to set the number of streams to use per GPU				
10				
min 2, maximum 15				

2. In the list of Available GPUs, Check the relevant GPUs you wish to enable

Available GPUs Select GPUs to use from the list below			
✓ 0: Tesla T4			
✓ 1: Tesla T4			

3. Click the **SAVE** button.

C Save settings

Status of the Analytics Engine

Before running the video stream, verify the **Analytics Engine(s) Status** section, make sure the status mode is **READY** or **RUNNING**.



When necessary, click the **Refresh** icon at the top right corner to restart the Analytics Engine(s). Consult viisights support before using this feature.

	DEVELOPER	HELP	wise L
_	_		
		e	H SAVE
Analytics Engine(s)	Status:		
Analytics En	gine #0		
STATUS: ACTIVE STREAM DEVICE (GPU)	READY 15: 9 Tesia T4		

Retention

The **Retention** tab enables the user to define the amount of time (up to 30 days) that the system retains its videos and detections for review.

Nota bene, that the average video stream hour disk space consumption may vary due to the camera settings.

Define Retention settings

- 1. In the **Data Retention Time** field, specify the number of hours or days that detected data is retained in the system.
- 2. Click the **SAVE** button.

Data Retention Settings	
Data Retention Time Slide the time slider to set data retention 3 days 23 hours maximum 30 days	H SAVE

Connector Tab

In this tab, the User can configure various available connectors, each of them is relevant for a specific Video Management System. The following VMS integration is available in wise:

- 1. Milestone
- 2. SMTP Alerts
- 3. SmartM Camera Sync
- 4. Genetec
- 5. Cayuga (QVMS)

Configuring VMS connectors:

Milestone:

- 1. Browse to System Settings --> Connectors --> Milestone
- 2. Turn on the toggle button to enable the integration from the Wise side
- 3. Fill in the relevant parameters of the Milestone server and configurations
- 4. Save the settings

\odot	SYSTEM SETTINGS		DEVELOPER HELP ADMIN
¢. ₽	System Settings	atrings Retention Connectors	4
Explorer Cocupancy	Milestone SMTP Alerts	Milestone 5	
₩ Vinde Control	SmartM Camera Sync Genetoc Cayuga	Advances of the second	6
Jul 6, 2022 12:21:17 PN		version v1.0 Version	

Field Name	Description	Note
AdjustTimeSyncInMilliseconds	Adjust the time for the sent analytic event in case of boundary boxes of detected object is not placed on the same frame in the smart client	Units are rounded seconds values only
Set alarm msg to "viisights analytic events - (class-name)"	True triggers sending alarms with msg name containing their class	default value unchecked
Frame Rate Of BB For Events In Milliseconds	Frame Rate Of Boundary Box For Events In Milliseconds	default value 250
Disable Sending Tracks for Analytic Events	False triggers sending multiple track events.	default value unchecked
Port number of Milestone Event Server		default value 9090
IP of Milestone Server		default value localhost
Merge alarms - checkbox	Merge alarms with similar events in close time proximity	default value unchecked
Merge Alarms - threshold value	Merge Alarms With Similar Events In Time Proximity Less Than:	default value 2000
XProtect Password	XProtect Password To Authenticate	
Milestone Proxy Gateway		default value localhost:999
XProtect Username To Authenticate		
v1.0		
Xprotectport number		80

Genetec

- 1. Browse to System Settings ---> Connectors ---> Genetec
- 2. Turn on the toggle button to enable the integration from the Wise side
- 3. Fill in the relevant parameters of the Genetec server and configurations

4. Save the settings

1. Refresh the stream connection by using the "two arrow" $\ensuremath{\mathsf{Icon}}$

$|\mathcal{G}|$



Field Name	Description	Notes
Auto Disabled	Auto Disabled	Default value is checked
Auto Start	Auto Start	Default value is unchecked
Auto Update	Auto Update	Default value is checked
Genetec Address	The IP address and port of the Genetec machine e.g http://192.168.1.2:4590	* Conveys analytic infomration via SDK * Utlizes port 4590
Genetec Pre Fix URL	The designated RTSP URL address and port of the Genetec machine e.g rtsp://192.168.1.2:654	* Conveys RTSP URL * Always utilizes port 654
Password	The Password of the installed Genetec program	Config Tool & Security Desk
Username	The Username of the installed Genetec program	Config Tool & Security Desk

Field Name	Description	Notes
Wise App ID	Certification code, provided by Genetec per wise integration	<u>code:</u> CgjQYk+kWgLBPpf3qV6g+RNTwG32aEyYhM/mk0NPVjtDtarY2CCZzZruq6QAMH9b

Network Architecture:

	Deployment Sample	
	Image: State of the state	time
	3. RTSP	
	Port:654 Port:4590	
<u>וך אר</u> ינן 2. Video	Genetec Media Gateway Genetec WebSDK	
Camera —	GENETEC Security Center Management	
	viisights confidential & proprietary Informat	ion 3

Cayuga:

- 1. Browse to System Settings --> Connectors --> Cayuga
- 2. Turn on the toggle button to enable the integration from the Wise side
- 3. Fill in the relevant parameters of the Cayuga server and configurations
- 4. Save the settings

\odot	SYSTEM SETTINGS			DEVELOPER HELP ADMIN
↓ Alarms ⊮ Explorer	System Settings Classes Alarms Group:	2 Settings Reterior Convertions Camera Connectors		4
*	Milestone	Cayuga	5	
	SMTP Alerts	Cayoga Seconds		
Venicle	SmartM Camera Svnc	auto Disable		6 SAVE
Counting	Genetec	auto Disable		
People	Cayuga	auto Register		
Estimate		auto Register		
	3	auto Start		
-71	_	🔽 auto Update		
Content		outo Update Pawword		
Management		Viisights5344		
\$		pessword		
Settings		SAI UH Adress		
		SALuri adress		
1		SGS Url Adress		
		192.168.1.46:62000		
		SGS of advece and port Username		
		administrator		
		usename		
			Al rights reserved to Visights solution NL Copyright @ 2015-2022. Version 2.1.24.0,2 - production, 8.1.1.2.0,0,8.1.1.2.0,9. edit6975	
Jul 6 2022				
2.04:50 PM				

Field Name	Description	Notes
Auto Disable	Auto Disable	Default value checked
Auto Register	Auto Register	Default value checked
Auto Start	Auto start	Default value checked
Auto Update	Auto Update	Default value checked
Password	The Password of the Cayuga Client	
SAI URL Address	Not relevant do not touch	
SGS URL Address	The IP address and port of the Cayuga Machine	* This port conveys RTSP URL from GSC to Wise * Always utilizes TCP & UDP 62000
Username	The username of the Cayuga Client	

SMTP Alerts:

To set mail alerts for alarms -

SHOTEN SETTINGS	
Canada Rama Pres	sastqUd Northa Domaton
Miestone	Note: There are additional clusters available: any change on this instance will affect the current instance only! Use cluster instance to define global settings.
TSG Convector	
SMITP Alerts	SMTP Alerts
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Change the following fields -

- From_email Specify the email address sending the alarms (the source email).
- Number of Images To Attach To Email Select how many alarm images to attach to the email (optional).
- Email Password Insert the password of the source email.
- Email Username Insert the source email username.
- **To_email** Enter the email address to receive the alarms.



10 - System Monitor

This chapter describes how a system administrator can monitor the system health. This information should be used when consulting viisights' support engineer for customer support

System Monitor

The **System Monitor** displays an overview of the system's behavior and health. This section enables you to monitor detections, stream and events delays.



When choosing the required **Delay** type from the dropdown list, select the preferred time frame in order to track the delay, in order to monitor the time delay between the actual time when the event occurred and the time when it is reported by the system.



The detection delay is an internal measurement that is relevant when the streaming delay is high, in order to pinpoint the root cause of the streaming delay.



11 - Developer

Introduction

This is the viisights WISE integration API Reference. It provides descriptions, syntax, and usage examples for each of the actions and data types for viisights API.

The viisights engine processes live streams, analyzes them and performs detections. Some of the detections can be configured to raise an alarm in case they are detected in the stream e.g. PEOPLE FIGHTING.

The API is targeted for External system such as Control Center or VMS that needs to integrate with the Wise platform to receive those alarms e.g. PEOPLE FIGHTING, PERSON WITH MASK.

Third party systems can get the detection either by pulling the detections using REST API or by subscribing to the wise alarm channel and receive the the alarm messages by push mechanism.

When using push mechanism, each message to the subscriber represents a single alarm with the same Alarm model. The channel is redis for more details see <u>https://redis.io/topics/pubsub</u> and it supports a large set of clients see <u>https://redis.io/clients</u>. The name of the topic to subscribe is analytics_alarms.

The alarms in both mechanisms have the same data model but they are received the different ways.

There are several alarm types:

Analytics	Alarms detected by the WISE Analytic engine by processing the camera stream(s) .e.g. PEOPLE FIGHTING
System	Alarms about the system healthy e.g. Analytics engine stopped/started.
Device	Alarms about the devices e.g. Added new camera, stopped camera

Clients that are interested to get alarms using push mechanism should subscribe for the redis topic as follows:

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Alarm type redis topic name Analytics analytics_alarms System system_alarms Device device_alarms

Terms and Definitions:

Detection Type	Description	Examples
Object	The entity being detected on the screen	Person, Car
Attribute	A property of an object	Color, type
Action	Define Object's behavior	Person walking, car driving
Event	Defines interaction between two or more objects	people fight, person get into car
Alarm	A detected class/es with attribute(s) that it is configured in Wise to raise an alarm	people fighting
Class	A low level labeling of a frame or a sequence of frames.	Object, Attribute, Action, Event

The available API calls are divided into five groups:

• Camera:

Name	Description	Туре
Camera List	Get Cameras list	Get
Register a Camera	Register one or more cameras in viisights Wise	Post

Register cameras by csv file	Register one or more cameras by csv file for viisights Wise	Post
Start the camera stream	Starts an already registered Camera Stream	Post
Stop the camera stream	Returns the camera status	Post
Pause alarm	Pause alarm/Uncaused alarm - value in minutes	Post

• Alarms:

Name	Туре
List of analytics alarms	Get
List of statistic alarms stat	Get
List detected alarms	Get
List system alarms	Get
List detected alarms	Get
Get alarm by alarm id	Get
Updated alarm	Put
List of event type notification alarms	Get

• <u>NN:</u>

Name	Туре
Return the List of the GPU devices	Get
Save the active GPU	Post
Return NN status	Get
Return NN status	Get

Connectors:

Name	Туре
List of cameras per connector	Get
Connect cameras to connector	Post
Get cameras per connector	Get

Update cameras to connector	Put
Delete cameras from connector	Post

• Applications:

Name	Туре
Get people estimated system setting	Get
Update people estimated application system setting	Post
Get estimated people counting	Get
Get camera that related to estimated application.	Get
Update camera estimated application	Post



The Help menu includes the latest user manual available on the Wise platform





User Settings Manager Users Cluster Mode Accessing Cluster Mode Operate Cluster Mode Content Management System Settings Log out

User Settings

The system is provided with a predefined **WISE** user.

This user can define additional users, as needed.

There are several types of Wise users:

User name	Designation	Available Tabs	Manage Users list
admin	Viisights Operations usage	All	Yes
director	Viisights Sales usage	All	Yes
operator	Customers' usage	All	No
Wise	Customer' usage	<u>No access to:</u> Content Management System Settings System Monitor	No

How to define user settings:

- 1. Click on your **User type** at the top right corner of the screen.
- 2. Select the User Settings option
- 2. Modify the username and/or password.

3. Click the SAVE NEW PASSWORD button.

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/582f8940-b097-4 8a5-bd21-2e0fd31a21d9/User_Settings.webm

Manager Users

Cluster Mode

Accessing Cluster Mode

Cluster mode enables the user to view, register and control all video streams across all servers in one control panel. To access the cluster, click the user button at the top-right of the window —



Operate Cluster Mode

Content Management

The Content Management tab lists all the registered video streams across all servers that have been registered.

The " column will indicate on which server the stream is currently running.

\odot	CONTENT MANAGEMENT								HELP WISE	2
لِمُ Alarms	Total 119 contents Running: 1 Failed: 4 Stopped:	113			Ļ		Search		Q +	:
servers	Preview	ID ¢	Type ¢	Name ¢	Server ¢	Status ¢	Message ¢	Upload Time 👻	Actions	Â
Content Management	- The second	_stream	STREAM	rtsp_stream	QA_1	RUNNING		Jul 6, 2021 2:00:04 PM	÷	1

System Settings

System Settings must be configured in order to get started working with the system for the first time and then from time to time, if needed.

The system Settings enable you to define various settings that affect the system's behavior across all servers.

Log out

To log out of the system, select your username in the top-right corner of the page and then the **Logout**

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/c5648f47-6bdd-4 433-ac95-6e52efd43aef/Logout_of_the_system.webm