





VEZHA

User Guide for VEZHA Person

Re-Identification Plugin





Content

Description of Person Re-Identification	4
1. Installation	5
2. Log In	8
3. Settings	8
4. Analytics	9
4.1. Analytics Search	9
4.2. Add Analytics	10
4.3. Edit Analytics	13
4.4. Start, Stop, Watch Analytics	14
5. Search	15
6. Attribute Search	19





Description of VEZHA Person Re-Identification

What this module of the VEZHA system can do:

- Search and detection of people from photographs from the base of captured frames in real time.
- View the locations and movements of people on the wanted list.
- Search and identification of people based on their special signs.
- Determination of additional information: gender, age, features of appearance and clothing.
- Storage and transmission of data.

Person Re-Identification can be used to:

- Crime prevention.
- Creation of security systems for schools, kindergartens, educational institutions.
- Control of space and events at train stations and airports.
- Controlling shoppers in stores.

Basic data used by the Person Re-Identification:

- Fixing people in a video stream on city streets, in a crowd or indoors.
- Data analysis and selection of frames with people from the video stream received from surveillance cameras.

• Collection of photographic materials with information about the location, time of fixation and special features.





1. Installation

Before installation of VEZHA Person Re-Identification Plug-In – Milestone Xprotect Management Client 2020 and Milestone Xprotect Smart Client 2020 R2 need to be installed on Your system.

1) Launch the installer by double-clicking the downloaded file with the left mouse button Person_Re_Id_Setup.

2) In the window that opens, select the language that will be used during the installation process. To go further, click **OK**. To abort the installation, click **Cancel**.

(_)	Select the language to use of installation.	during the
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3) In a new window, read the installation recommendations and click **Next** to continue the installation, or the **Cancel** button to abort the installation.







4) In the **Select Destination Location** window using the **Browse** button, specify the place where you want to install the plugin. The plugin must be installed in the **Milestone** folder with other plugins. After selecting the desired folder, click **Next** to continue the installation or **Cancel** to abort the installation.

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Select D Where	e should VEZHA Person Re-Identification be installed?		
To con	Setup will install VEZHA Person Re-Identification into ntinue, click Next. If you would like to select a different ram Files\Milestone\MIPPlugins\VEZHA Person Re-Iden	o the followin folder, click	ng folder. Browse. Browse

5) In this window, for correctly program work, you must correctly fill the fields and click **Next** to continue the installation or **Cancel** to abort the installation.







6) Click **Install** to start installation.



After the installation is completed, click Finish.







2. Log In

To enter the system you need to go through authorization. To do this, enter the **Login** and **Password** in the appropriate fields of the modal window and click **Sign in**.

	Authoriza	ation	
	ogin		
P	assword		

3. Settings

In order to open the **VEZHA Person Re-Identification** settings, click the icon in the upper right corner of the screen. Select and click **Settings**. In the window that opens, select the **VEZHA Person Re-Identification tab**.

Settings			_		100
Application	Host	192.168.0.53			
Panes	Port	2001			
	Portal	2001			
Functions	Websocket port	2081			
Timeline	Milestone video server address	192.168.0.248			
Export	Language	English			
Search				Ap	ppl
Joystick	Authorization				
Keyboard	Login				
Access Control					
PersonReidPlugin	Password	Sign in Sign out	1		
Advanced					
Language					
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To change the server settings in the VEZHA Person Re-Identification tab, you can edit the following fields: Host, Port, Portal, Websocket port, Milestone video server address.

To change the language, use the **Language** field and select most convenient for you.

To make changes, click **Apply** and reload the plugin.





4. Analytics

This tab is developed to view the list of analytics with the ability to add, edit, delete analysts, view video from active analysts in real time.

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Stopped Person Re-ID - 1		Start	
Stopped Универмаг парковка		Start	
4.1. Analytics Search			
At the top of the screen is a search field.			

Person Re-	Identification			
Camera	Status			
	All	~	Search	Reset

To find the analytics you need, enter the name of the camera or select the analytics status.

To start the search, click the **Search** button.





4.2. Add analytics

To add analytics, push button Add analytics.

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New window will appear.

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Field name	Description
Stream	Click on the field and select a name from the drop-down list cameras.
	The video stream will be used to create analytics.
Notification detect delay,	The time after which the system will send notifications about
seconds	detection. The recommended time is 5-10 seconds.
Send notification if	Check the box Send notifications if object is detected to create your
object is detected	own event to send notifications.

In order to create new analytics click Add stream.



In the opened window fill the fields:

Field name	Description
Name	Enter the name of the video stream in the field. This field will be displayed in all components of the program that use video streams.
Login	Enter the name of the current user in the field.
Password	Enter password
Camera	Select a camera from the drop-down list.
Camera address	Enter the address in the field, or select on the map below the location of the camera. The system will automatically determine the location coordinates.
Camera direction	drag the slider to change the direction of the camera. Indication of camera rotation helps in determining the direction of the vehicle.

To save the changes, click **Apply**.





Example:

Press Stream in selector and choose your stream. Related to this stream picture will appear below.



Then you may set the area you want be detected by drawing any shape you want, for example as a rectangle on the picture. Also you may mark checkbox **Send notifications if object is detected**, set time in seconds in **Notification detect delay** (recommended 5-10 seconds) and set analytics working time from the right side, but exactly in time format: 00:00:00 - 23:59:59



At the end push blue button **Save** and wait analytics to be added.





4.3. Edit analytics



Live Playback Search VEZHA Person Re-identification Analysis Search Attributes search Archive Search Search Status ID Status Camera Status Status Camera Status Status Camera Status Status Camera Status Status Status Status Camera Status Status	2	Setup Perso Add a	nReidPlugin 2
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420 Stopped Person Re-ID - 2		Start	Û
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418 Stopped Универмаг парковка		Start	Û

The window **Edit analytics** will appear with settings which was set when analytics were added. If you want edit detection area press icon to delete it. Then you can set a new area.







When new area is set, and all other changes are done you should press blue button **Save** and wait until all changes are saved.

Recognition options
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Recognition options
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12:00:00 - 18:00:00

4.4. Start, Stop, Watch Analytics

When your analytics are ready you may start any by pressing button start. When it needs to be stopped you should press red button stop. Also you may watch running analytics by clicking corresponding icon on picture below.

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5. Search

Next section in VEZHA Person Re-Identification Plug-in menu is Search.



Click Search to display the search results. Click Reset to clear the input fields.

Search	Search			
Camera	Perio	d		
All	~		Search	Reset
<< < 1 of 13370	>>> 1	То раде		

Field name	Description
Time period	Select period of time for which the search will be performed.
Camera	Select the cameras by which search will be performed.





In our case, we choose baby we want be detected with more information about her. First of all, we choose any photo with her, and then press magnifier \bigcirc icon.



In the window that opens, you can search with more detailed parameters.

Camera Period Limit Confidence: 75%	Search					
	Camera	Period	Limit	Confidence: 75%		
Person Re-ID - 3 • 01-11-2020 14:53:00 - 30-11-2020 14:53:00 10 Search Reset	Person Re-ID - 3	 01-11-2020 14:53:00 - 30-11-2020 14:53:00 	10		Search	Reset

Field name	Description
r leiu name	Description
Time period	Select period of time for which the search will be performed.
Camera	Select the cameras by which search will be performed.
Limit	Set the number of displayed frames
Confidence	Set the percentage of matching the search frames to the original frame





In our case, we mark the checkbox \square , set **Period** of time by using calendar and press green button **Accept** for changes to be saved, then we may set **Limit** of photos to be founded and **Confidence** from 0 to 100%. At the end we press green button **Search** for detailed searching process to be started.



After getting results we choose photos which are most suitable for us and proceed our search by selecting camera gave us best results to get more related photos in next search.







And we get more results.



As it shown below, by clicking icon from the picture in the right side of screen it will appear in full size as it made by camera and you may save it pressing button Save image.







6. Attribute Search

Next section in VEZHA Person Re-Identification Plug-in menu is Attributes Search.



There are such search fields.

Search					
Hat	Hair length	Up	Up length	Bag	Down
All	All 🗸	All ~	All ~	All ~	All 🗸
Down length	Down clothes	Age	Gender		
All ~	All ~	All ~	All ~	Search Reset	

Search field	Description	
Hat	The presence or absence of a headdress	
Hair length	Short or long hair	
Up	Choosing the color of outerwear from the proposed list of colors	
Up length	Choosing a short or long top	
Bag	Backpack or bag	
Down	Choosing the color of the bottom of the clothes from the proposed list of colors	
Down length	Choosing a short or long bottom of clothing	
Down clothes	Choosing the type of bottom of clothing	
Age	Choosing an approximate age	
Gender	Gender selection	





For example, let's set attributes as it shown on picture below and start search.

So, we are looking for male in green top and gray bottom clothes. We got results and then choose one photo and press magnifier \mathbf{P} icon to proceed search in details.



New window appears and we mark the checkbox \blacksquare , set **Period** of time by using calendar and press green button **Accept** for changes to be saved, then we may set **Limit** of photos to be founded and **Confidence** from 0 to 100%. At the end we press green button **Search** for detailed searching process to be started.







After getting results we choose photos which are most suitable for us and proceed our search by selecting camera gave us best results to get more related photos in next search.



Also we may start a new search of person standing nearby. For example, guy in gray top.







New window appears and we mark the checkbox \square , set **Period** of time by using calendar and press green button **Accept** for changes to be saved, then we may set **Limit** of photos to be founded and **Confidence** from 0 to 100%. At the end we press green button **Search** for detailed searching process to be started.



And we get more results by that guy standing nearby.





About VEZHA:

Our mission is to create a safe environment for residents of cities of all sizes and to help Ukrainian businesses optimize their security and safety management processes.

For more information visit: https://vezha.io/



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