

FacePRO

Deep learning facial recognition system



Facial Recognition System for milestone

Facial recognition server software for milestone using deep learning technology



Key Features

High performance facial recognition

- High performance Deep Learning facial recognition function distinguishes face orientation, sunglasses, surgical mask, facial aging change



	WV-ASF950
Range of angles*	Horizontal range : -45° to +45° Vertical range : -30° to +30°
Minimum size of the face image*	30 pixels (Eye Distance : 15 pixels)

*There might be a change of specification.

Facial recognition function

Registered face detection function

- Issue notification if there is a match with a registered person. Display history in list format.

Use Case

You do not want to overlook the store arrival of a regular customer because you want to be ready to provide priority service.

Alarm issued for registered persons

If this is a regular customer

Alarm issued

Detected face image Registered face image

Unregistered face detection function (detection of suspicious persons)

- Register faces by area and issue notification if an unregistered person is detected. Display history in list format.

Use Case

You want to monitor suspicious persons about to enter an area where only certain persons are allowed.

Area where only certain persons are allowed entry

Alarm issued for unregistered persons

If this is not a person allowed entry

Alarm issued

Detected face image

[Important] • When you install WV-ASF950 (Ver.2.20 or later), please select "Registered face detection function" or "Unregistered face detection function." Only one of these functions can be used on a single server.
• When the "Unregistered face detection function" is used, the time that it takes to issue the alarm is several seconds longer than the conventional recognition function.

Cost Reduction

- Up to 20 cameras that have best shot function can be connected to one server. Reduce the system total cost such as server cost, network cost etc.

*The number of cameras that can be connected is determined by the number of people passing and the retention period of the face image.

The best shot function sends only the necessary images to the server.

- Face detection
- Face image clipping
- Best shot judgment

System expandability

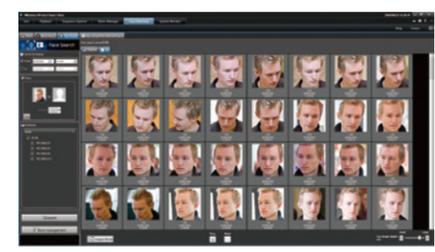
- Up to 30,000 faces can be registered and WV-ASF950 can be used in large facilities.
- Max 100 servers up to 2,000 cameras in large system. When unregistered face detection function is selected, up to 1,000 cameras.

*The WV-ASF950 includes license for 4 network cameras. To connect more than 5 cameras to the WV-ASF950, purchase WV-ASFE901 or WV-ASFE904 sold separately. When unregistered face detection function is selected, up to 10 cameras



Face search

- Face images that camera detected are stored, and it can be searched later.
- By searching the face database, you can display the result of each cameras in chronological order and find movement locus of persons.
- Specify camera or date in detected face images and display the result in the list in similarity order.



Face Matching

- When it is matched with registered people, alarm of face matching is output in real-time, and display an alarm history in the list.
- Specified screen image can be played back on control monitor with double-clicking on an alarm history.



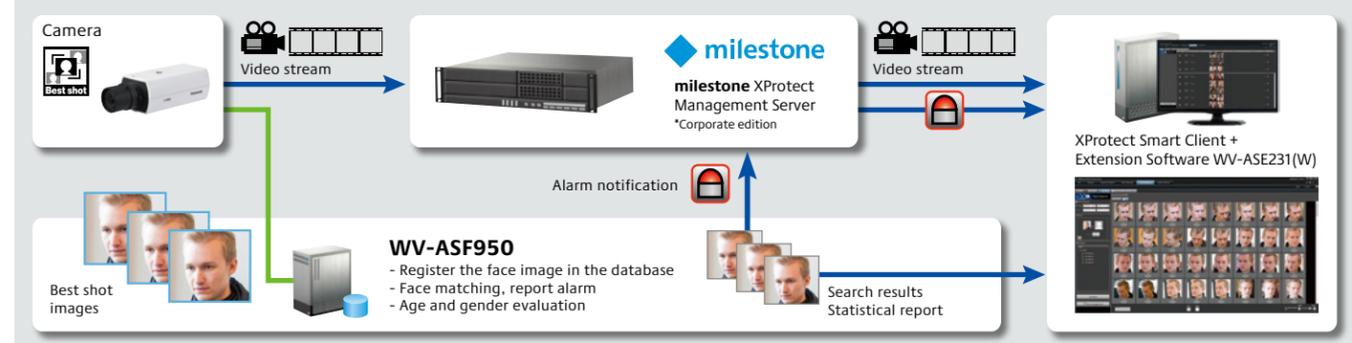
People counting, Age and Gender Statistics

- Count people of detected face and evaluate their age and gender
- Display the result on the screen with statistical graph
- The statistical data can be saved as a CSV file* for analytical use.

*CSV file: A file that can be edited using a spreadsheet software such as Microsoft® Office Excel®



Basic System Connection Example



Industry examples



Specifications

Basic Specifications

		Installation Type	
		Registered Face Detection	Unregistered Face Detection ¹
Basic	Face matching speed	At 1 second in 30,000 registered faces ²	At 3 second in 30,000 registered faces ²
	Max. number of face in matching list	Up to 30,000 faces ³	
	Face searching speed in database	3 seconds per 5 million faces ⁴	
	Max. number of face history	Up to 10 million items	
Face Conditions	Range of angles	Horizontal range : -45° to +45°, Vertical range : -30° to +30°	
	Minimum size of the face image	30 pixels (Eye Distance : 15 pixels)	
	Face with sunglass	Yes	
	Face with surgical mask	Yes	
Functions	Registered face matching	Yes	Yes ¹
	Unregistered face matching	No	Yes
	Face search and associated video playback	Yes	
	People counting / Age and gender statistics	Yes	
system	Max. number of connected camera	10 cameras is suitable, up to 20 cameras per 1 face matching server. ⁵	Up to 10 cameras per 1 face matching server. ⁵
	Max. number of servers	100 servers (10 primary + 90 secondary)	
System Expansion/Integration	SDK · API support	Yes	
	Notification	I/O Unit (Supported models:ADAM6256/ADAM6050/ADAM6060/ADAM6066)	
	Max. number of client PC that can be linked with the alarm	16	

¹ Depending on settings, Unregistered Face Detection and Registered Face Detection can be used simultaneously. ² From receiving the face thumbnail to matching in face matching server.

³ Two Additional Face Registration Kits WV-ASF951W are necessary.

⁴ The best case when the time range is narrowed down and the number of search result is 100 faces. Depending on the search conditions, the search time may take several minutes.

⁵ Deploying plural face servers in a system is acceptable.

System requirements

Hardware

CPU	Intel® Xeon® or Core™ i7 series 3.40 GHz or faster (4-core 8-thread or better)	Graphic	NVIDIA® QUADRO® P5000, NVIDIA® QUADRO® RTX5000 NVIDIA® A4000
Memory	32 GB or more	Power supply	600 W or more
HDD	1 TB or more	OS	Microsoft® Windows® 10 Pro R55 (64 bit), Microsoft® Windows Server® 2016 Standard Edition, Microsoft® Windows® Server 2019 Standard Edition

[Important] If the system down of Windows occurred such by unexpected power outage, etc., database may be damaged and the functions such as face search and face verification may not work appropriately. It is strongly recommended to use UPS in order to avoid corruption of data.

Management Software

Software version	XProtect Corporate 2019 R2, 2020 R2, 2021 R1
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XProtect Management Server

OS	Microsoft® Windows® 10 Pro R55 (64bit) Microsoft® Windows® Server 2016 Standard Edition Microsoft® Windows® Server 2019 Standard Edition
CPU	Intel® Core™ i3-6100 3.7 GHz or better ⁶
Memory	16 GB or more ⁶
HDD	256 GB SSD for OS/VMS storage (Add additional storage depending on the number of days you want to save data) ⁶
Graphic	Intel® HD Graphics 530 (If Hardware Acceleration is required add graphics card fitting the requirements) ⁶
Interface	2 x 1 Gigabit Ethernet ⁶

⁶ Refer to the manual of Milestone XProtect system requirements.

XProtect Smart Client

OS	Microsoft® Windows® 10 Pro R55 (64bit) ⁷ Microsoft® Windows® Server 2016 Standard Edition Microsoft® Windows® Server 2019 Standard Edition
CPU	Intel® Core™ i7-3770 or better
Memory	8 GB or more
Graphic	Hardware acceleration is required. ⁸
Interface	100 / 1000 Mbps

⁷ Need to use Windows® 10 patched with KB4022725. Turn off Cortana's setting.

⁸ Refer to the manual of Milestone XProtect system requirements.

Network Camera (face detection)

Network Camera	WV-S1136 / WV-S1132 / WV-S1131 / WV-S1112 / WV-S1111 / WV-S2531LTN ⁹ / WV-S6130 / WV-SPN631 ¹⁰ / WV-SPN611 ¹⁰ / WV-SPN531A / WV-SPN311A / WV-SPN310A / WV-SP305 / WV-SFV631LT ⁹ / WV-SC385 ¹¹
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⁹ Although this is the outdoor model, it can be used as face matching camera for indoor only. ¹⁰ The Optional IR-LED(WV-SPN6FRL1) can not be installed with any of the tested Lenses.

¹¹ After fixing the angle of view, if you control the camera with PTZ operation, the face matching function will not work properly. In this case, set the view of angle properly again by using the preset position function.

Facial Recognition System Software

Facial Recognition System Software	WV-ASF950W Ver. 2.20 or later
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Products Lineup

Face matching server

Product Name	Model No.
PC Software Package	WV-ASF950W
Additional Camera Kit	1ch WV-ASF901W
	4ch WV-ASF904W

⁶The performance of the face matching function varies depending on such conditions as the camera installation, camera settings, camera adjustment, surroundings and photographic subjects.

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• All TV pictures are simulated. • Specifications are subject to change without notice.

Important

- Safety Precautions : Carefully read the Basic Information, Installation Guide and Operating Instructions before using this product.
- Panasonic i-PRO Sensing Solutions Co., Ltd. cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

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