

# *FacePRO*

Deep learning facial recognition system





# Facial Recognition System for Video Insight

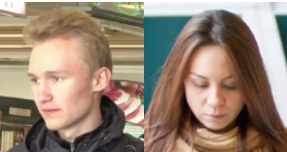
Facial recognition server software for Video Insight using deep learning technology



## Key Features

### High performance facial recognition

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



Angled face



Sunglasses



Surgical mask



Facial aging change

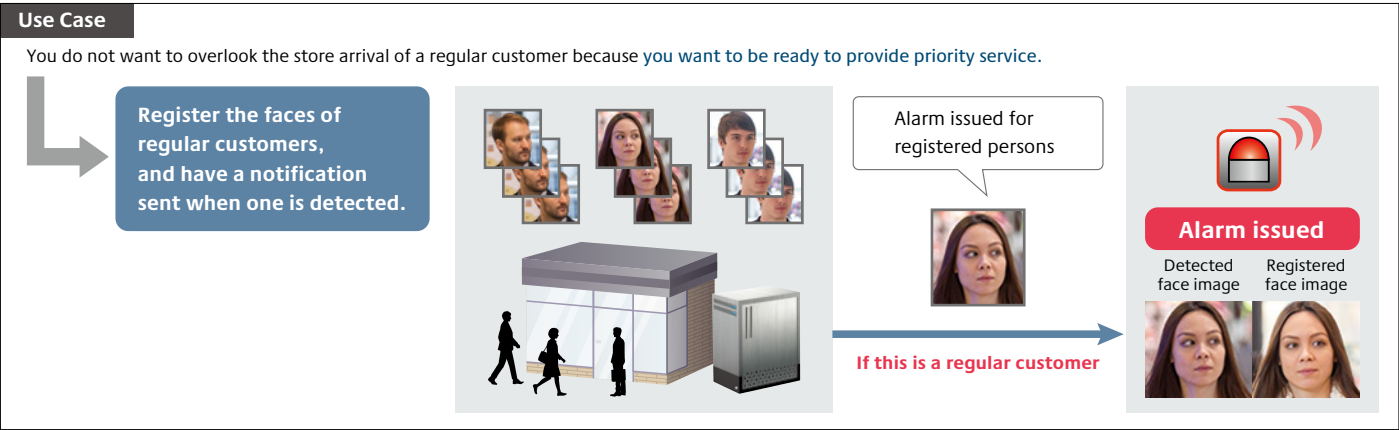
	WV-ASF950
Range of angles*	Horizontal range : -45° to +45° Vertical range : -30° to +30°
Minimum size of the face image*	30 pixels (Eye Distance : 15 pixels)

\*There might be a change of specification.

### Facial recognition function

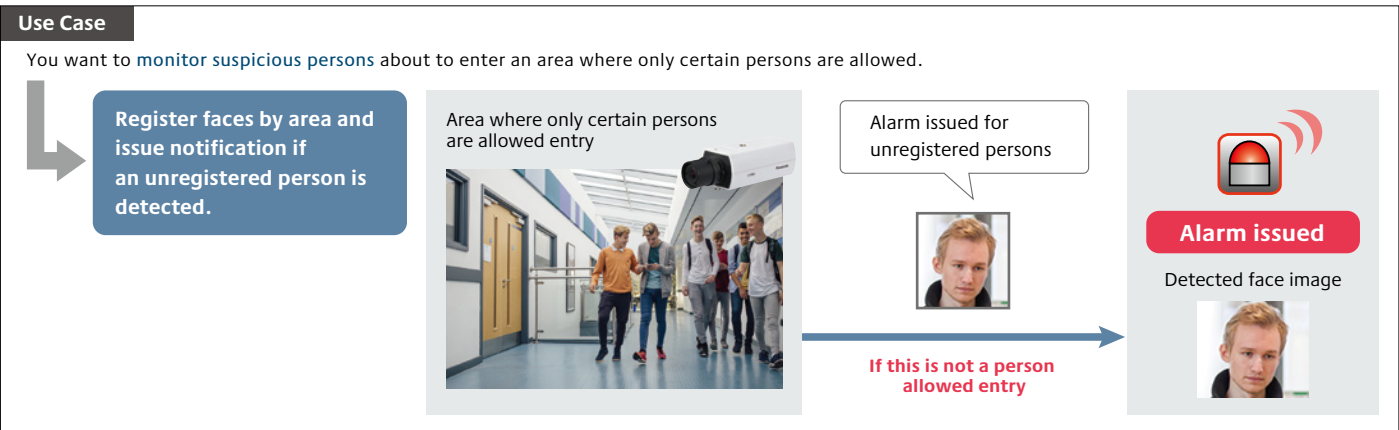
#### Registered face detection function

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



#### 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.

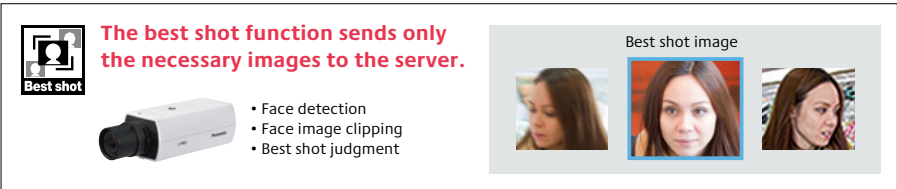


[Important] • When you install WV-ASF950 (Ver.1.00 or later), please select "Registered face detection function" or "Unregistered face detection function." Only one of these functions can be used on a single server.  
• When the "Unregistered face detection function" is used, the time that it takes to 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.

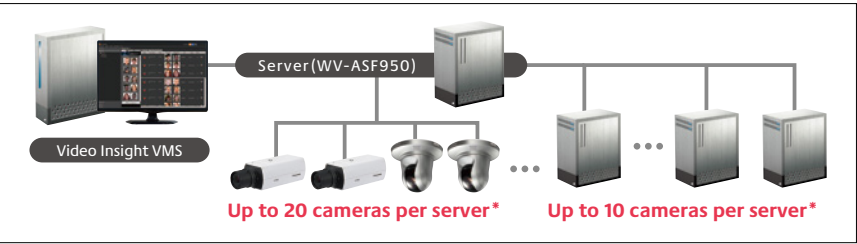
\*The number of cameras that can be connected is determined by the number of people passing and the retention period of the face image.



## System expandability

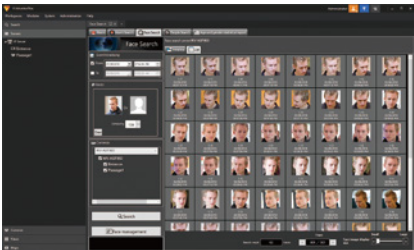
- Up to 30,000 faces can be registered and WV-ASF950 can be used in large facilities.
- Max 10 servers up to 2,000 cameras in large system. When unregistered face detection function is selected, up to 1,000 cameras.

\*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 camera 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

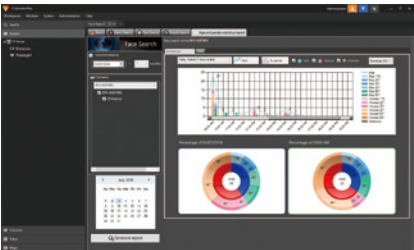
- When it is matched with registered people, alarm of face matching is output in real-time, and display an alarm history in the list.
- Specified screen image can be played back on control monitor with double-clicking on an alarm history.



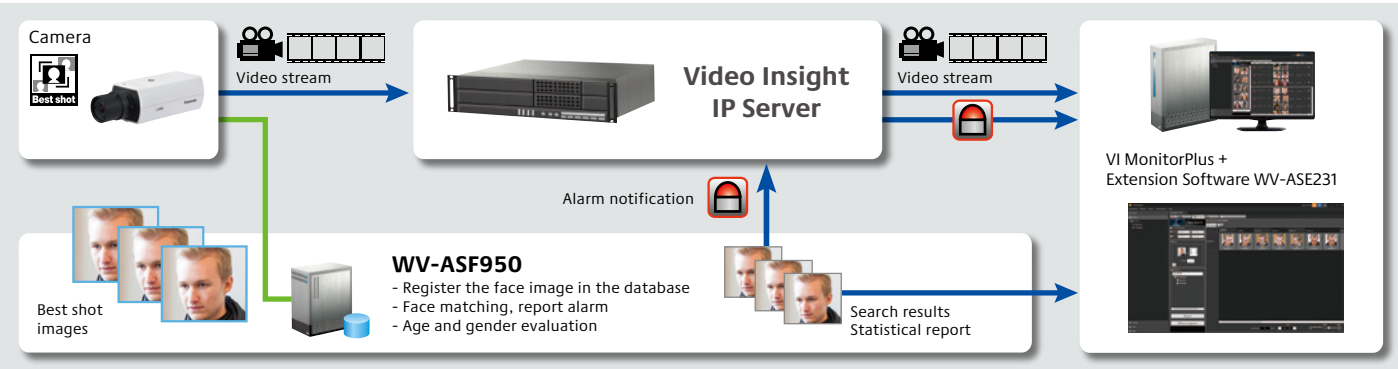
## People counting, Age and Gender Statistics

- 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



Airport



Retail



School



Railway

# Specifications

## Basic Specifications

		Installation Type	
		Registered Face Detection	Unregistered Face Detection <sup>*1</sup>
Basic	Face matching speed	At 1 second in 30,000 registered faces <sup>*2</sup>	At 3 second in 30,000 registered faces <sup>*2</sup>
	Max. number of face in matching list	Up to 30,000 faces <sup>*3</sup>	
	Face searching speed in database	3 seconds per 5 million faces <sup>*4</sup>	
	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 <sup>*1</sup>
	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. <sup>*5</sup>	Up to 10 cameras per 1 face matching server. <sup>*5</sup>
	Max. number of servers	100 servers (10 primary + 90 secondary)	
System Expansion/ Integration	SDK・API support	Yes	
	Notification	Rotation Warning Light / Mail Notification	
	Max. number of client PC that can be linked with the alarm	16	

<sup>\*1</sup> Depending on settings, Unregistered Face Detection and Registered Face Detection can be used simultaneously. <sup>\*2</sup> From receiving the face thumbnail to matching in face matching server.  
<sup>\*3</sup> Two Additional Face Registration Kits WV-ASF951 are necessary. <sup>\*4</sup> 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. <sup>\*5</sup> 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.

### VI MonitorPlus + Extension Software WV-ASE231

CPU	6th Generation or better Intel Core processor (3.1 GHz quad-core or more)
Memory	8 GB or more
HDD	120 GB for OS and Video Insight IP Server applications
OS	Windows® 10 Pro R55 or later (64bit) *Need to use Windows 10 patched with KB4022725.
Graphic	NVIDIA® QUADRO® K620 2 GB video card
Network I/F	1000 Mbps or more

### Video Insight IP Server + Extension Software WV-ASE231

CPU	6th Generation or better Intel Core processor (3.1 GHz quad-core or more)
Memory	8 GB or more
HDD	120 GB for OS and Video Insight IP Server applications
OS	Windows® 10 Pro R55 or later (64bit) *Need to use Windows 10 patched with KB4022725.
Graphic	NVIDIA® QUADRO® K620 2 GB video card
Network I/F	1000 Mbps or more

### Network Camera (face detection)

Network Camera	WV-S1136 / WV-S1132 / WV-S1131 / WV-S1112 / WV-S1111 / WV-S2531LTN <sup>*6</sup> / WV-S6130 / WV-SPN631 <sup>*7</sup> / WV-SPN611 <sup>*7</sup> / WV-SPN531A / WV-SPN311A / WV-SPN310A / WV-SP305 / WV-SFV631LT <sup>*6</sup> / WV-SC385 <sup>*8</sup>
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<sup>\*6</sup> Although this is the outdoor model, it can be used as face matching camera for indoor only. <sup>\*7</sup> The Optional IR-LED(WV-SPN6FRL1) can not be installed with any of the tested Lenses.  
<sup>\*8</sup> 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-ASF950 Ver. 1.00 or later
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### Management Software

Management software + Extension software	Video Insight 7.4 to 7.8 + WV-ASE231
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## Products Lineup

### Face matching server

Product Name		Model No.
PC Software Package		WV-ASF950, WV-ASF950W
Additional Camera Kit	1ch	WV-ASFE901, WV-ASFE901W
	4ch	WV-ASFE904, WV-ASFE904W

Product Name		Model No.
Additional Face Registration Kit		WV-ASF951, WV-ASF951W
Upgrade Software		WV-ASF950UGW
Extension Software(for Video Insight)		WV-ASE231, WV-ASE231W

<sup>\*</sup> The 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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**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.

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



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