FacePRO

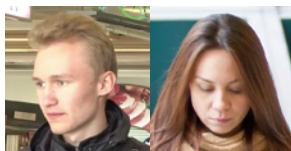**Deep learning facial recognition system**

Facial Recognition System for **Genetec**™

Facial recognition server software for Genetec 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
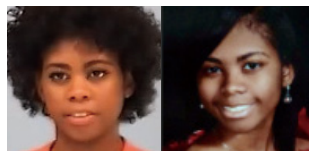
| | Angled face | Sunglasses | Surgical mask | Facial aging change |

	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.

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.

Register the faces of regular customers, and have a notification sent when one is detected.

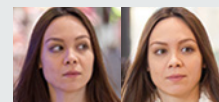Pop up alarm when registered customer arrivals

If this is a regular customer

Alarm

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.

Register faces by area and issue notification if an unregistered person is detected.

Area where only certain persons are allowed to enter

Pop up alarm when unregistered persons enter certain area

If this is not a person allowed entry

Alarm

Detected face image

[Important] • When you install WV-ASF950 (Ver.3.10 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.
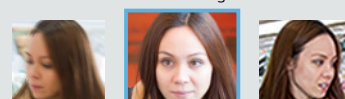
Best shot

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

• Face detection
• Face image clipping
• Best shot judgment

Best shot image
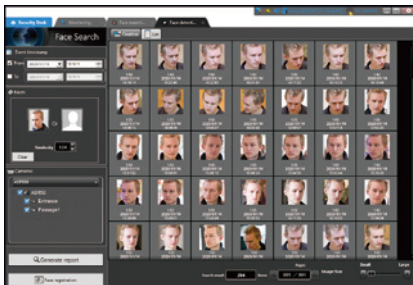
System expandability

- 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

Server(WV-ASF950)

Up to 20 cameras per server* **Up to 10 cameras per server***
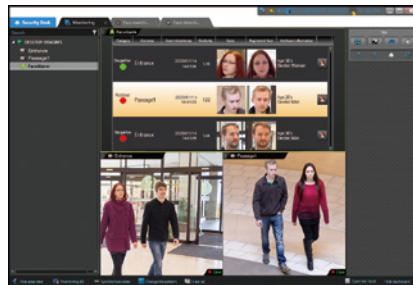
Face search

- 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.
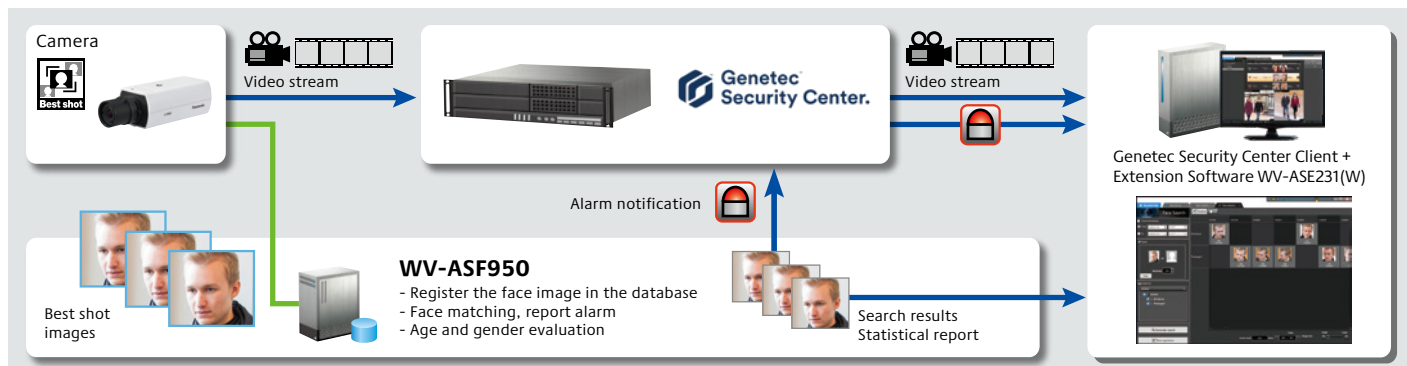
People counting, Age and Gender Statistics

- 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

Camera

Best shot

Video stream

Genetec Security Center.

Video stream

Alarm notification

Genetec Security Center Client + Extension Software WV-ASE231(W)

Best shot images

WV-ASF950
- Register the face image in the database
- Face matching, report alarm
- Age and gender evaluation

Search results
Statistical report

Industry examples
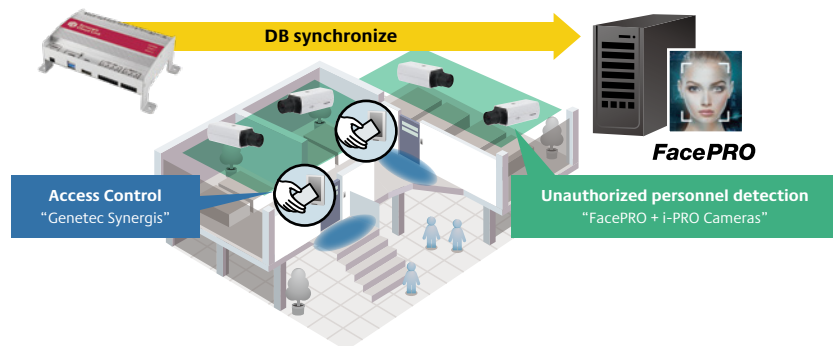
Airport

Retail

School

Railway

Integrating FacePRO's unregistered face detection function with the Synergis access control system

Genetec Security Center.
Security Center Synergis.

Overview

Detecting imposter activity using "FacePRO" and "Synergis" database integration

DB synchronize

FacePRO

Access Control
"Genetec Synergis"

Unauthorized personnel detection
"FacePRO + i-PRO Cameras"

Value
- In addition to Synergis Card Access control, FacePRO with i-PRO camera can detect unauthorized personnel even with masks on who has entered the facility using someone else ID card.
  - At the gate : Card Access Control
  - Inside the gate : Unauthorized personnel detection
- Database integration between Synergis and FacePRO for unified ACS management experience

Use Case

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

Face data registered to Synergis is imported into FacePRO server and FacePRO checks whether captured faces are registered or not.

Area where only certain persons are allowed to enter

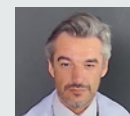Pop up alarm when unregistered persons enter certain area

If this is not a person allowed entry
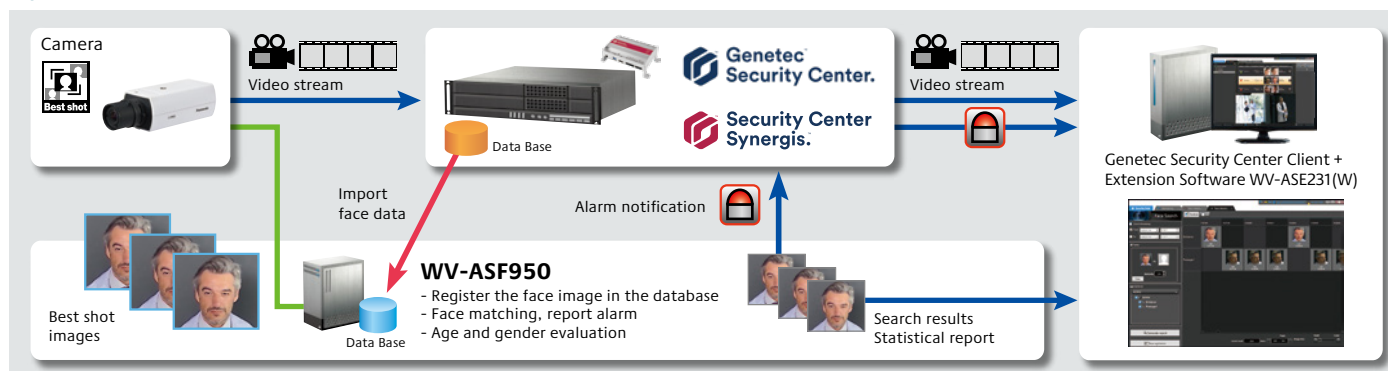
Alarm

Detected face image

[Important] • When you install WV-ASF950 (Ver.3.10 or later), please select "Unregistered face detection." 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.
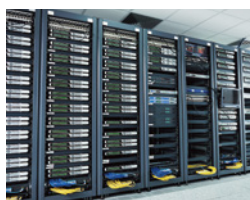
System Connection Example

Camera

Best shot

Video stream

Data Base

Genetec Security Center.
Security Center Synergis.

Video stream

Import face data

Alarm notification

WV-ASF950
- Register the face image in the database
- Face matching, report alarm
- Age and gender evaluation

Data Base

Best shot images

Search results
Statistical report

Genetec Security Center Client + Extension Software WV-ASE231(W)

Data and face images registered in Genetec's Synergis can be imported into FacePRO server

People who enter authorized area using someone's ID or by following behind someone with access can also be detected with FacePRO's unregistered face detection function
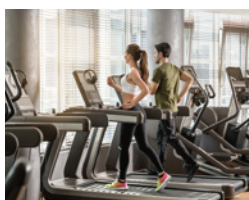
Industry examples

Server room / R&D facility / Safe deposit box

Court

Fitness Club

Casino

Airport

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	Rotation Warning Light / Mail Notification	
	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-ASFE951 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
FacePRO WV-ASF950

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 RS5 (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.

Genetec Security Center Server + Extension Software WV-ASE231

CPU	Intel® Xeon® E5640 2.66 GHz or better
Memory	16 GB or more
HDD	80 GB for OS and Security Center applications
OS	Microsoft® Windows® 10 Pro RS4 (64bit) , Microsoft® Windows Server® 2016 Standard Edition with Update English/French
Graphic	Standard SVGA video card
Network I/F	1000 Mbps

Genetec Security Center Client + Extension Software WV-ASE231

CPU	Intel® Core™ i7-4770 or better
Memory	8 GB or more
HDD	120 GB for OS and Security Center applications
OS	Microsoft® Windows® 8.1 Pro (64bit), Microsoft® Windows® 10 Pro RS4 (64bit) English/French
Graphic	NVIDIA® QUADRO® K620 2 GB video card
Network I/F	100 / 1000 Mbps

Network Camera (face detection)

Network Camera	WV-S1136 / WV-S1132 / WV-S1131 / WV-S1112 / WV-S1111 / WV-S2531LTN [*6] / WV-S6130 / WV-SPN631[*7] / WV-SPN611[*7] / WV-SPN531A / WV-SPN311A / WV-SPN310A / WV-SP305 / WV-SFV631LT [*6] / WV-SC385 [*8]

*6 Although this is the outdoor model, it can be used as face matching camera for indoor only. *7 The Optional IR-LED (WV-SPN6FRL1) can not be installed with any of the tested Lenses.
*8 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.3.10 or later

Management Software

Management software + Extension software	Security Center V5.8 / V5.9 / V5.10 + WV-ASE231 Ver.3.00 or later

*Five GSC-1SDK-PANASONIC-FaceMatch per client are necessary in order to integrate with Genetec Security Center.
 In case of the integration with the Synergis access control system, an additional one GSC-1SDK-PANASONIC-FaceMatch is necessary.
*WV-ASF950 does not support expansion server configuration of Genetec Security Center.

Products Lineup
Face matching server

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

Product Name	Model No.
Additional Face Registration Kit	WV-ASFE951W
Upgrade Software	WV-ASF950UGW
Extension Software (for Genetec)	WV-ASE231W

*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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