



Hikvision Temperature Screening Solution

Foreword

Human **Skin-Surface temperature** is an important indicator of physical health.

In many scenarios, people with abnormal skin-surface temperature need to be **detected quickly and accurately** in order to take measures to prevent a situation from becoming dangerous.



Current Situation

Traditional methods like using the ear thermometer or mercury thermometer perform well in detecting people with abnormal skin-surface temperature. However, all of these methods have obvious and significant deficiencies:

Close Contact, High Risk

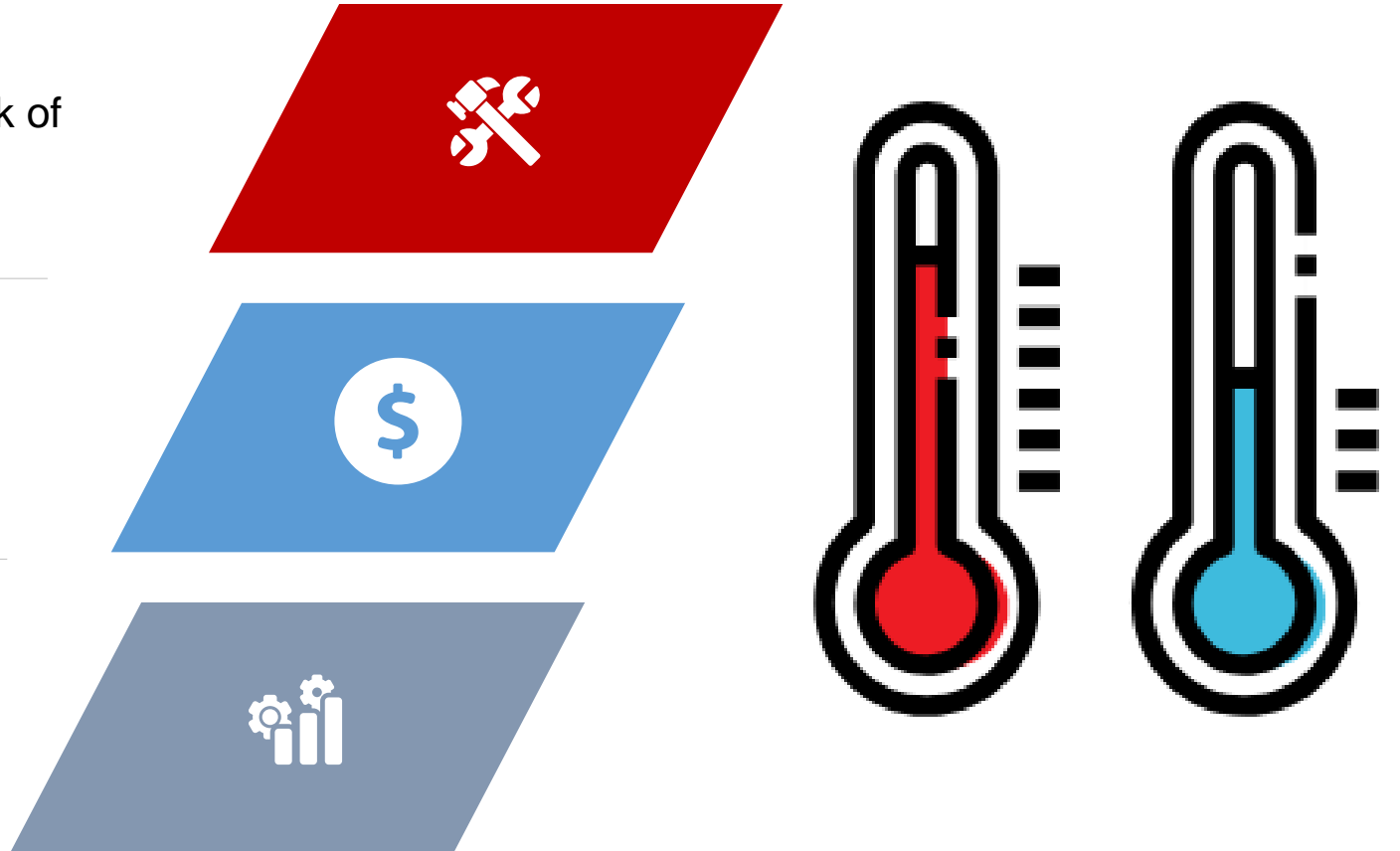
- Close contact among users, leading to high risk of infection.

High Cost, Low Efficiency

- Lots of manpower invested.
- Person-by-person inspection is inefficient.

Difficult to Collect Statistics

- Manual registration is required, which may lead to human error and not so timely feedback.



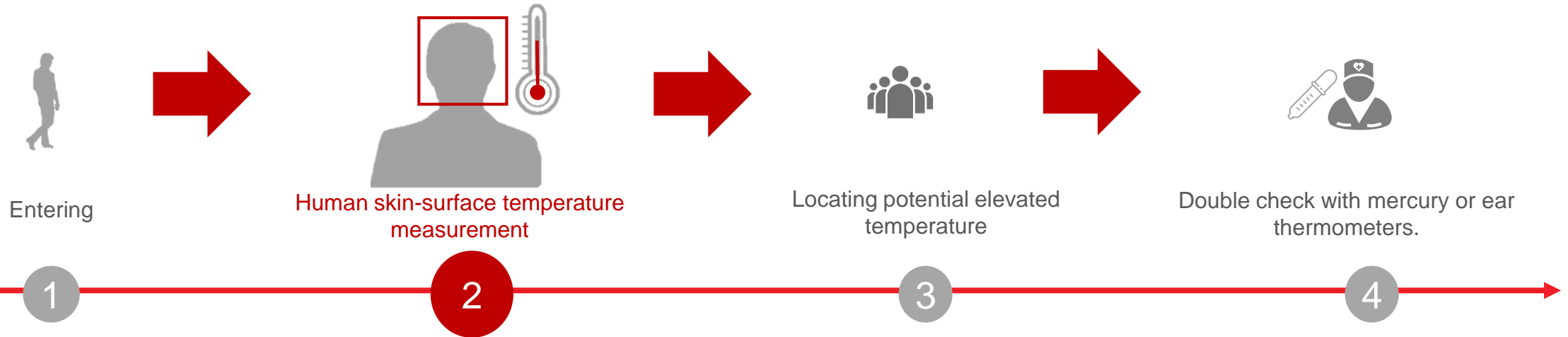
Better Approach

Using machines instead of manpower alone is a much better choice in many aspects.

- Reducing the contact among people. The detection process can be **fast and convenient**, as **imperceptible** as possible, and can minimize the impact on people's daily travel.
- Effectively **reducing manpower** and **the duration** of skin-surface temperature measurement.
- Producing **real-time and accurate temperature** measurement data for management and decision-making.



Solution Business Flow



Fast preliminary temperature screening without contact



SAFE

Distant and accurate check without physical contact, reducing cross-infection possibilities.

EFFICIENT

Automatic alarm triggering, reducing manpower invested.

ADAPTABLE

Multiple product types, easy to deploy, and suitable for different scenarios.

TRACEABLE

Combining temperature, image and face identification for easy management and query.

Solution Overview

Based on AI and thermal technology, Hikvision offers a professional solution to achieve temperature screening, mask detection, identity verification, stranger alarm and so on.

Solution Architecture



Tripod

+



**Temperature
Screening
Camera**

+



DeepinMind NVR

+

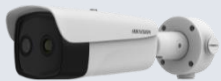
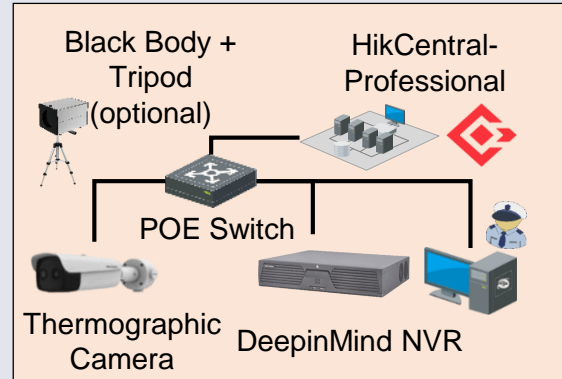
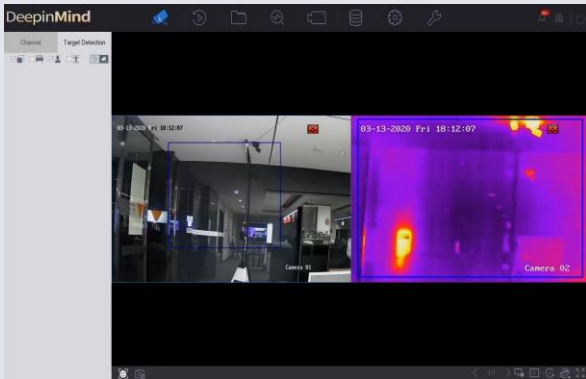


Monitor

Temperature Screening & Mask Detection

Solution Introduction

- **Temperature Screening:** Simultaneous Temperature screening for multiple persons (indoor), contact-free
- **Mask Detection:** Detecting whether people wear masks, and timely giving alarms on people without masks
- **Identity Verification & Stranger Alarm:** Confirming identity, **even with mask**, and giving alarms on strangers



Thermographic Camera



DS-2TD2637B-10/P

DS-2TD2617B-3/6PA

DS-2TD2636B-15/P

DS-2TD1217B-3/6PA

DS-2TD2636B-13/P



DeepinMind NVR

iDS-9616(/32)NXI-I8/X(B)(STD)(T)

iDS-7716(/32)NXI-I4/(16P)/X(B)(STD)(T)

iDS-6708NXI-I/8F(B)(STD)(T)

Product Design



- **Number of People:** total number, abnormal temperature, no mask, normal temperature



- Temperature Status
- Facial Recognition Results
- Mask Detection

➤ Visualized GUI & Voice Broadcast:

- Special interface in DeepinMind NVR, visually displaying all kinds of information
- Supporting voice broadcast upon mask and temperature status

➤ Efficient Search & Report:

- Fast video search of target people, such as people with abnormal temperatures, without masks and so on;
- Exporting reports with ID, skin-surface temperature and mask status

Temperature Screening & Mask Detection

Report from DeepinMind NVR

Index	Name	Attendance Count	Unattendance Count	Attendance Rate	Lib Name	Sex	03-13	03-13	03-13Temperature Status	03-13Temperature	03-13Mask
1	Nicole	1	25	3%	crew	Female	Y	15:12:09-18:05:25	Normal	36.0℃	No
2	Katie	1	25	3%	crew	Female	Y	14:47:16-18:12:29	Abnormal	40.3℃	Yes
3	Frank	1	25	3%	crew	Male	Y	14:50:17-18:12:24	Normal	36.3℃	Yes

Search - Abnormal Temperature

DeepinMind

Smart Search

Search by Event

Search by Picture

Search by Name

Search by Appearance

Face Search

Human Body Detection

Vehicle Search

Face Picture Library

Smart Event Settings

Engine Settings

Smart Report

Channel

[All] Camera

Time Segment

Custom

2020-03-13 15:00:00

2020-03-13 23:59:59

Gender

All

Age

All

Glasses

All

Facial Expression

All

With Gauze Mask

All

Mustache

All

Temperature

All

☐ >=(30.0~45.0)

35.0

Start Search

Search – No Mask

DeepinMind

Smart Search

Search by Event

Search by Picture

Search by Name

Search by Appearance

Face Search

Human Body Detection

Vehicle Search

Face Picture Library

Smart Event Settings

Engine Settings

Smart Report

Channel

[All] Camera

Time Segment

Custom

2020-03-13 15:00:00

2020-03-13 23:59:59

Gender

All

Age

All

Glasses

All

Facial Expression

All

With Gauze Mask

All

Mustache

All

Temperature

All

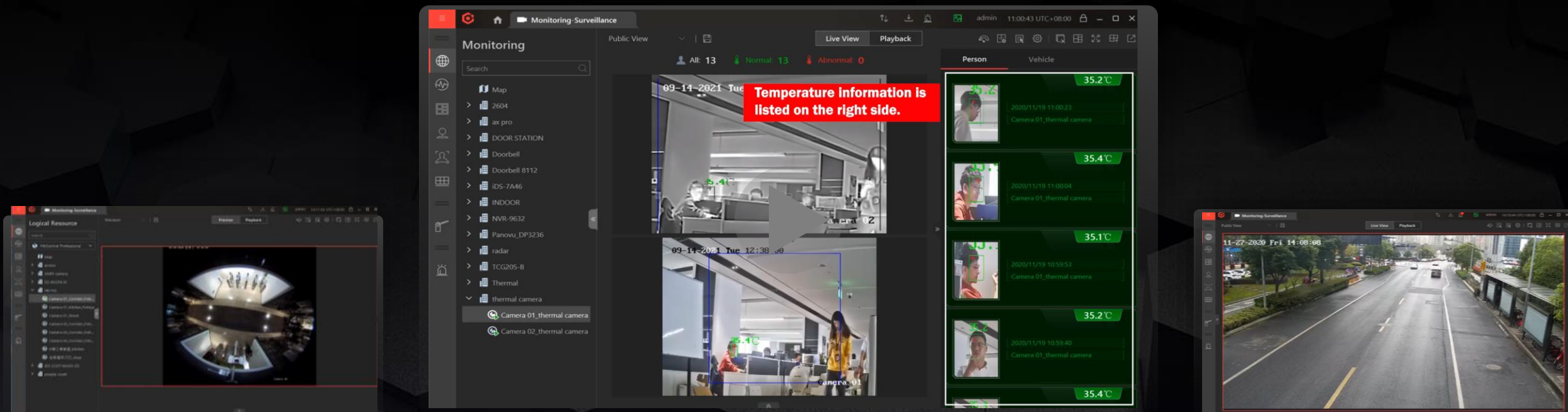
☐ >=(30.0~45.0)

38

Start Search



One panel for all

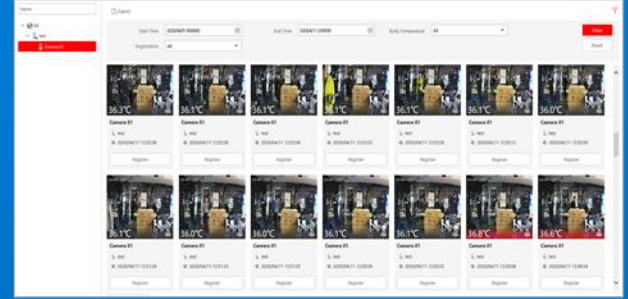


All information that matters in display

The intelligent analysis results and video can display on one monitor interface.

- More analysis data e.g. ANPR, facial recognition, people counting, etc. can be displayed on HikCentral control client in real-time.
- Operators can search all analysis results.

HCP - Interactive Group Temperature Screening with AI



1

Temperature and mask status

Intuitive Local Monitoring

2

Instant & Interactive Alarm

No mask detection or abnormal detection

3

Quick evidencing

2.AI-based personnel attendance management and statistics dashboard

1

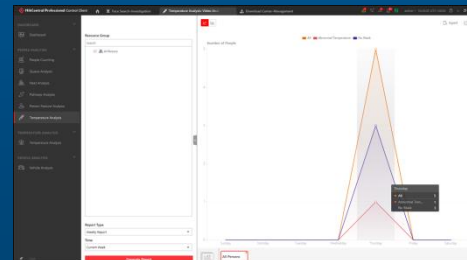
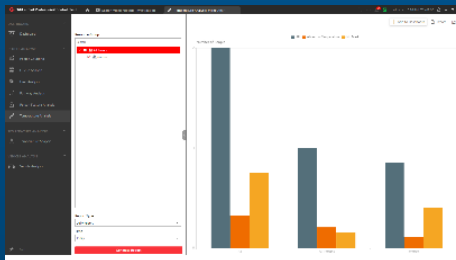
Viewing Statistics & Trends










Temperature statistical trends of staff

2

Records retrieving

Multi-site records available at center



All Registration Information											Export
Time	Name	Sex	Temper...	High-risk Areas	Des...	Monitoring Picture		Point	Group	Registrar	Operation
202...	James...	Male	36.3℃	No				Are...	Site_01	Admin	
202...	Harry...	Male	37.7℃	No				Are...	Site_02	Admin	
202...	Kobe...	Female	38.7℃	No				Are...	Site_01	Admin	

Camera Configuration



Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Live View Parameters

Protocol

☒ TCP

☐ UDP

☐ MULTICAST

☐ HTTP

Play Performance

☐ Shortest Delay

☒ Balanced

☐ Fluent

Display Rules Information

☒ Yes

☐ No

Display POS Information

☐ Enable

☒ Disable

Auto Start Live View

☒ Yes

☐ No

Image Format

☒ JPEG

☐ BMP

Display Temperature Info.

☒ Yes

☐ No

Display Rules Info. on Ca...

☒ Yes

☐ No

Record File Settings

Record File Size

☐ 256M

☒ 512M

☐ 1G

Save record files to

D:\Users\thanasit\Web\RecordFile

Browse

Open

Save downloaded files to

D:\Users\thanasit\Web\Download

Browse

Open

Picture and Clip Settings

Save snapshots in live vi...

D:\Users\thanasit\Web\CaptureFil

Browse

Open

Save snapshots when pla...

D:\Users\thanasit\Web\PlaybackF

Browse

Open

Save clips to

D:\Users\thanasit\Web\PlaybackF

Browse

Open

Save

Camera Configuration

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

System Settings

Maintenance

Security

User Management

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Basic Information

Time Settings

DST

RS-232

RS-485

About

Unit Settings

Time Zone

(GMT+07:00) Bangkok, Hanoi, Jakarta, Novosibirsk

NTP

☐ NTP

Server Address

time.windows.com

NTP Port

123

Interval

1440

minute(s)

Test

Manual Time Sync.

☒ Manual Time Sync.

Device Time

2023-03-27T22:04:49

Set Time

2023-03-27T22:04:45

☐ Sync. with computer time

Save

Camera Configuration

The screenshot displays the Hikvision web interface for camera configuration. The browser's address bar shows the URL `192.168.1.65/doc/page/config.asp` with a 'Not secure' warning. The top navigation bar includes 'Live View', 'Playback', 'Picture', and 'Configuration' (which is highlighted in red). On the left, a sidebar menu lists various settings: Local, System, System Settings, Maintenance (highlighted with a red bar), Security, User Management, Network, Video/Audio, Image, Event, Storage, and Temperature Screening. The main content area is titled 'VCA Resource Configuration' and contains two radio button options: 'Temperature Measurement' and 'Temperature Screening' (which is selected). A red 'Save' button is located at the bottom of the configuration area.

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View Playback Picture **Configuration**

Upgrade & Maintenance Log System Service **VCA Resource Type** Security Audit Log

VCA Resource Configuration

☐ Temperature Measurement

☒ Temperature Screening

Save

Local

System

System Settings

Maintenance

Security

User Management

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Basic Settings

Advanced Settings

Video/Audio

Image

Event

Storage

Temperature Screening

TCP/IP

DDNS

PPPoE

Port

NAT

Multicast

NIC Type

Auto

☐ DHCP

IPv4 Address

192.168.1.65

Test

IPv4 Subnet Mask

255.255.255.0

IPv4 Default Gateway

192.168.1.1

IPv6 Mode

Route Advertisement

View Route Advertisement

IPv6 Address

IPv6 Subnet Mask

IPv6 Default Gateway

::

Mac Address

a4:14:37:85:5b:a6

MTU

1500

☒ Enable Multicast Discovery

DNS Server

Preferred DNS Server

8.8.8.8

Alternate DNS Server

Save

Camera Configuration

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Video

Audio

ROI

metadata Settings

Channel No.

Camera 01

Stream Type

Main Stream(Normal)

Video Type

Video Stream

Resolution

2688*1520

Bitrate Type

Variable

Video Quality

Medium

Frame Rate

25

fps

Max. Bitrate

3072

Kbps

Video Encoding

H.265

I Frame Interval

50

Smoothing

50

[Clear<->Smooth]

Display VCA Info By

Video

Save

Camera Configuration

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Display Settings

OSD Settings

Privacy Mask

Picture Overlay

DPC

Picture in Picture

VCA Rule Display

Channel No.

Camera 02

03-27-2023 Mon 22:11:37

Camera 02

Image Adjustment

Image Enhancement

Video Adjustment

Default

03-27-2023 Mon 22:11:37

Camera 02

Image Adjustment

Image Enhancement

Video Adjustment

Default

Digital Noise Reduction

Normal

Noise Reduction Level

50

Palettes

Ironbow 2

DDE

Normal

DDE Level

50

Brightness Sudden Chan...

OFF

Regional Image Enhance...

OFF

Video Adjustment

Default

Camera Configuration

Configuration

192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Display Settings

OSD Settings

Privacy Mask

Picture Overlay

DPC

Picture in Picture

VCA Rule Display

Channel No.

Camera 02

03-27-2023 Mon 22:12:35

MAX:35.9℃

Camera 02

Font Size

20

Temperature Measurement Rule Color Table

Normal	<div></div>	<div></div>
Pre-Alarm	<div></div>	<div></div>
Alarm	<div></div>	<div></div>

Save

- Local
- System
- Network
- Video/Audio
- Image
- Event

Basic Event

Smart Event

- Storage
- Temperature Screening

Motion Detection Video Tampering Alarm Input Alarm Output Exception **Flashing Alarm Light Output** Audible Alarm Output

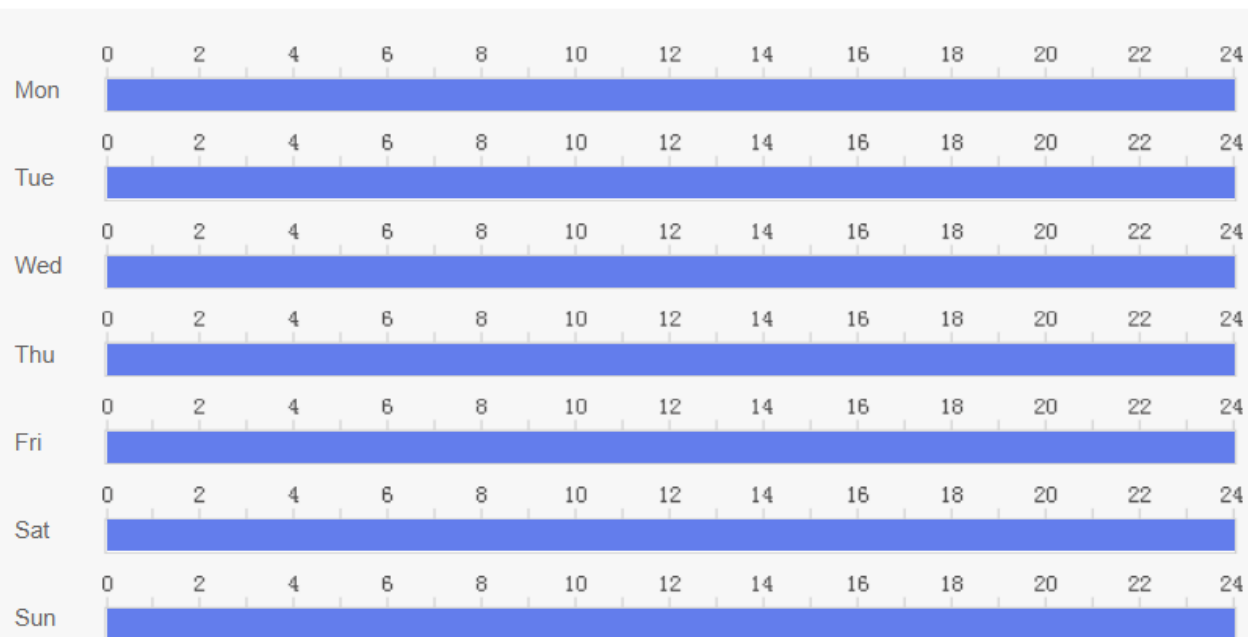
White Light Mode Solid

Flashing Duration 3 s

Brightness 50

Arming Schedule

Delete Delete All



Save

- Local
- System
- Network
- Video/Audio
- Image
- Event

Basic Event

Smart Event

Storage

Temperature Screening

Motion Detection

Video Tampering

Alarm Input

Alarm Output

Exception

Flashing Alarm Light Output

Audible Alarm Output

Alarm Type Temperature Measurement

Sound Type Warning

Warning Temperature is abnormal, please Test

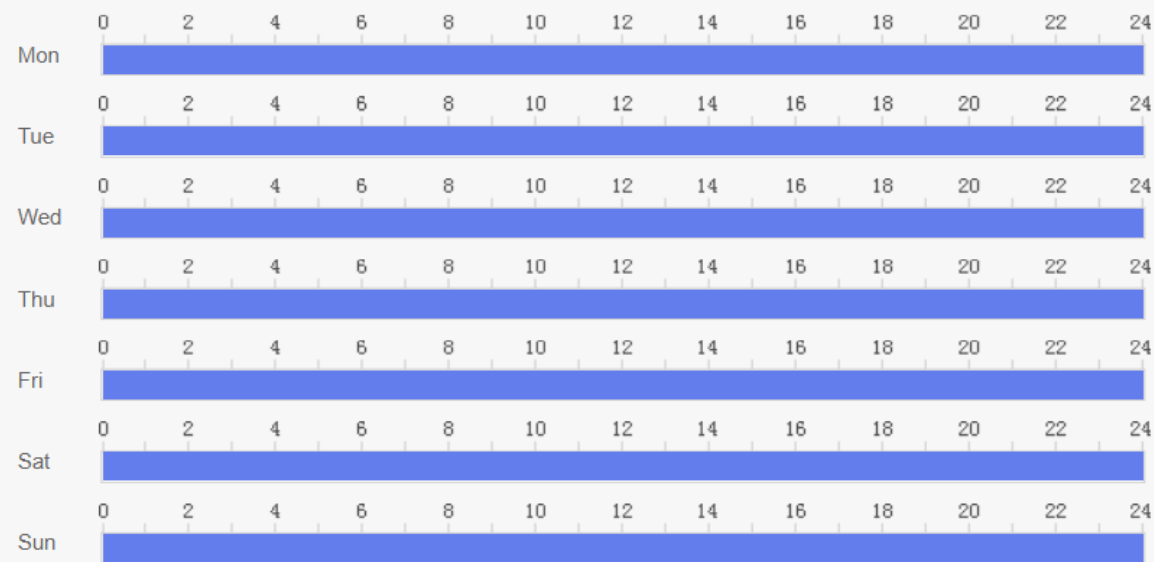
Alarm Times 2

Sound Volume 100

Arming Schedule

Delete

Delete All



Save

■ Adding Custom Audio File to Thermal Camera

**** ใช้โปรแกรม iVMS4200 หรือ Web browser เข้า IP ในการโปรแกรม ****

Configuration

- Local
- System
- Network
- Video/Audio
- Image
- Event
- Basic Event**
- Smart Event
- Storage
- Temperature Screening

Audible Alarm Output

Alarm Type: Temperature Measurement

Sound Type: Custom Audio

Custom Audio: Select File

Test Download Add

Alarm Times: 1

Sound Volume: 100

Arming Schedule

Delete Delete All

	0	2	4	6	8	10	12	14	16	18	20	22	24
Mon	[Blue bar]												
Tue	[Blue bar]												
Wed	[Blue bar]												
Thu	[Blue bar]												
Fri	[Blue bar]												
Sat	[Blue bar]												
Sun	[Blue bar]												

Save

ADDING CUSTOM AUDIO FILE THERMAL CAMERA

ไฟล์เสียงที่ใช้ต้องเป็น
sampling 8000hz
sampling size 16bit
mono

เวปแปลงไฟล์
<https://online-audio-converter.com/>

Barcode: RITTHICAI CK

■ Converter for Custom Audio File

The screenshot shows an online audio converter interface with the following elements:

- Step 1:** A blue button labeled "เปิดไฟล์" (Open File) is highlighted with a red box and a red arrow pointing to it.
- Step 2:** The output format is set to "wav" (highlighted with a red box) instead of the default "mp3".
- Step 3:** The sample rate is set to "8000 KHz" (highlighted with a red box) instead of the default "44.1 KHz".
- Step 4:** A grey button labeled "แปลง" (Convert) is highlighted with a red box and a red arrow pointing to it.

Other visible settings include a bitrate of "128 kbps", a channel count of "2", and checkboxes for "สเตอริโอ" (Stereo), "เฟดเอาท์" (Fade Out), and "กลับหลัง" (Reverse).

1. กดปุ่มเปิดไฟล์และเลือกไฟล์เสียงที่ต้องการจะแปลง

2. เลือกนามสกุลเป็น .WAV

3. เลือกอัตราสุ่มเสียง เป็น 8000Khz

4. กดแปลงและ Save ไฟล์

<https://online-audio-converter.com/th/>

<https://online-audio-converter.com/th/>

- Local
- System
- Network
- Video/Audio
- Image
- Event
- Storage
- Temperature Screening

Basic Settings

Face Capture

Basic Settings

Temperature Screening Configuration

Linkage Method

☒ Enable Temperature Measurement

☒ Display Temperature Info. on Stream

☒ Add Original Data on Capture

☒ Add Original Data on Stream

☒ Display Temperature in Alarm Info

Data Refresh Interval 3 s

Unit Degree Celsius(°C)

Temperature Range 30.0~45.0

Target Thermographic Parameters

Emissivity 0.98 ✓

Distance Mode Self-Adaption

Distance 2 m ✓

Algorithm Library Version

Temperature Measureme... V2.0.9build20200923

Face Capture Algorithm L... V2.0.203build20200827

Save

- Local
- System
- Network
- Video/Audio
- Image
- Event
- Storage
- Temperature Screening

Basic Settings

Face Capture

Basic Settings

Temperature Screening Configuration

Linkage Method

Channel No. Camera 01

- ☒ Enable Face Detection
- ☒ Upload Captured Face Image

Overlay Information

- ☒ Display Temperature
- ☒ Face Frame
- ☒ Face Temperature
- ☒ Display Face Temperature Position

Operation Guide

Configuration

Targeting

Face Detection Parameters

- Min. Pupil Distance 81 ✓
- Max. Pupil Distance 401 ✓
- Generation Speed 5
- Sensitivity 5
- Alarm When Temperature... 37.5 °C ✓
- Pre-Alarm Temperature 37 °C ✓
- Temperature Measureme... Mixed Mode



Draw Area

Max. Pupil ...

Min. Pupil Di...

Clear All

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Basic Settings

Face Capture

Basic Settings

Temperature Screening Configuration

Linkage Method

Channel No.

Camera 02

Overlay Information

☒ Display Temperature

☒ Face Frame ☒ Face Temperature ☒ Display Face Temperature Position



Draw Area

Clear All

Save

Black Body Parameters

☐ Enable Black Body Correction

Distance 2 m

Temperature 40 °C

Emissivity 0.97

Set Black Body Position Frame

Temperature Compensation

☒ Enable

Compensation Type Auto

Compensation Value 2.2 °C

Manual Calibration 0 °C

Environmental Temperature... Auto

Environmental Temperature 29.85 °C

Configuration

Not secure | 192.168.1.65/doc/page/config.asp

HIKVISION®

Live View

Playback

Picture

Configuration

Local

System

Network

Video/Audio

Image

Event

Storage

Temperature Screening

Basic Settings

Face Capture

Basic Settings

Temperature Screening Configuration

Linkage Method

Channel No.

Camera 01

Arming Schedule

Linkage Method

<input type="checkbox"/> Normal Linkage	<input type="checkbox"/> Trigger Alarm Output	<input type="checkbox"/> Trigger Recording
<input type="checkbox"/> Send Email	<input type="checkbox"/> A->1	<input type="checkbox"/> A1
<input checked="" type="checkbox"/> Notify Surveillance Center	<input type="checkbox"/> A->2	<input type="checkbox"/> A2
<input type="checkbox"/> Upload to FTP/Memory Card/...		
<input checked="" type="checkbox"/> Flashing Alarm		
<input checked="" type="checkbox"/> Audible Warning		

Save

- Local
- System
- Network
- Video/Audio
- Image
- Event
- Storage
- Temperature Screening
- Basic Settings

Face Capture

Overlay & Capture Shield Region Advanced Configuration

Display on Picture

☒ Display Target Info. on Alarm Picture

Snapshot Settings

Target Picture Settings

☐ Custom ☒ Head Shot ☐ Half-Body Shot ☐ Full-Body Shot

Target Picture Size

Width: Facial Width × 1.5

Head Height: Facial Height × 1.5

Body Height: Facial Height × 0.5

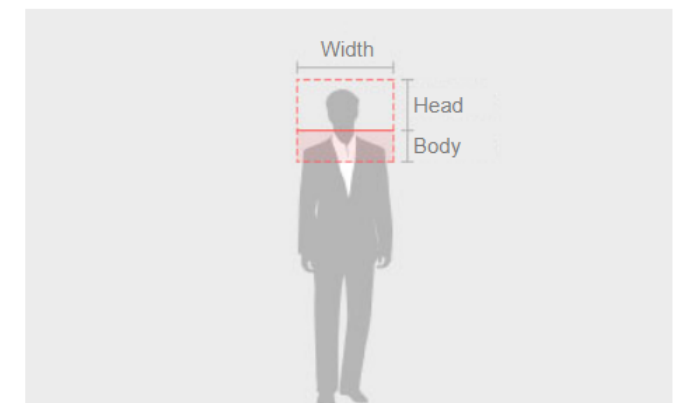
☐ Fixed Value Picture Height 100 pixel

Background Picture Set...

Picture Quality High

Picture Resolution 1080P(1920*1080)

☒ Background Upload



Diagram

Camera

Device No. [input field] ✓

Camera Info. [input field] ✓

Text Overlay

☐ Device No. ☐ Capture Time ☐ Camera Info.

- Local
- System
- Network
- Video/Audio
- Image
- Event
- Storage
- Temperature Screening

Basic Settings

Face Capture

Overlay & Capture

Shield Region

Advanced Configuration

Capture Parameters

☒ Upload Feature

Includes: Age, Gender, Wearing Glasses or Not, Wearing Mask or Not, Facial Expression

☐ Best Shot

Capture Times 1

Capture Threshold 20

☒ Quick Shot

Quick Shot Threshold 70

Max. Capture Interval 5 s

Capture Times ☐ Unlimited ☒ Limited 1 ☒

☐ Facial Posture Filter

Rotational Angle-Left 70 *i*

Rotational Angle-Right 70

Deflection Angle-Upper 50 *i*

Deflection Angle-Lower 50

If Face Posture Filter is enabled, the camera may not capture the qualified image.

No Wearing Mask Linkage

☐ Normal Linkage

☐ Audible Warning

NVR Configuration

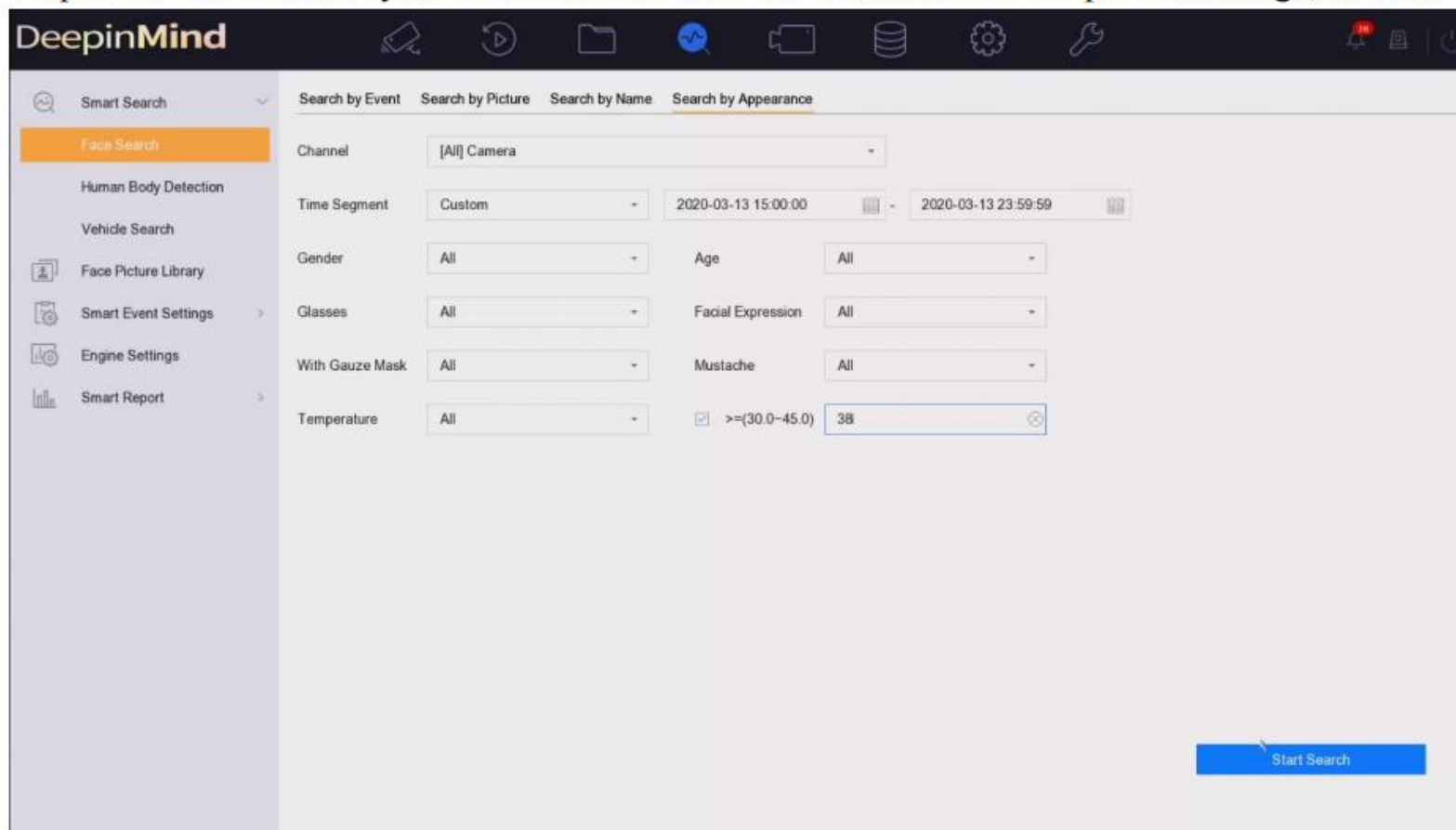


NVR Configuration

4.2 Data Retrieval

4.2.1 *Search by abnormal temperature*

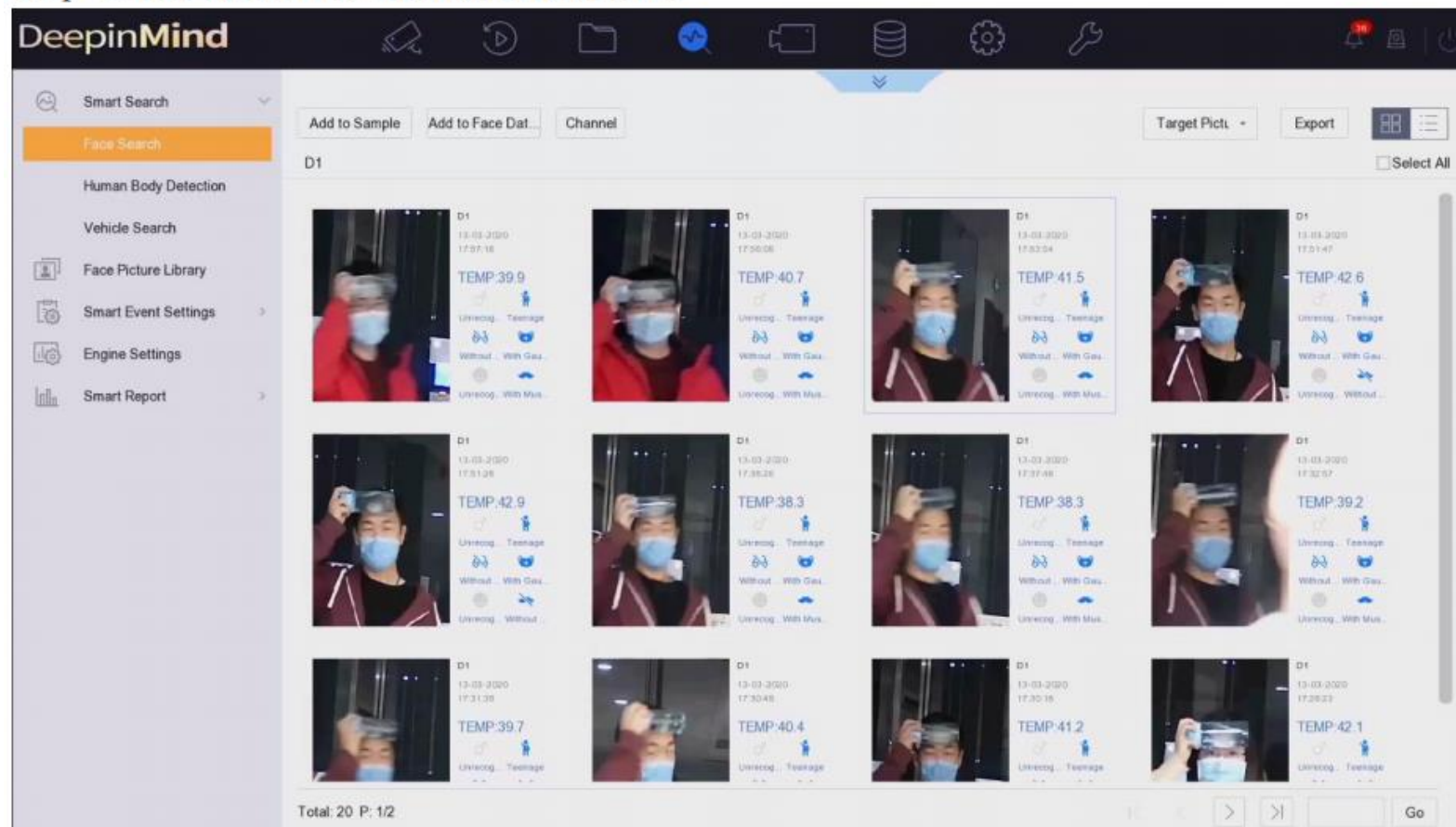
Step1: Go to smart analysis-Smart search-Face search, enter the temperature range, and start search.



The screenshot displays the DeepinMind NVR configuration interface. The top navigation bar includes the 'DeepinMind' logo and several icons for camera, playback, folder, search, video, database, settings, and help. The left sidebar contains a 'Smart Search' dropdown menu with options: 'Face Search' (highlighted), 'Human Body Detection', 'Vehicle Search', 'Face Picture Library', 'Smart Event Settings', 'Engine Settings', and 'Smart Report'. The main content area shows the 'Search by Appearance' tab selected. It contains a form with the following fields: 'Channel' (set to '[All] Camera'), 'Time Segment' (set to 'Custom' with a date range from '2020-03-13 15:00:00' to '2020-03-13 23:59:59'), 'Gender' (set to 'All'), 'Age' (set to 'All'), 'Glasses' (set to 'All'), 'Facial Expression' (set to 'All'), 'With Gauze Mask' (set to 'All'), 'Mustache' (set to 'All'), and 'Temperature' (set to 'All' with a checkbox for '>=(30.0~45.0)' and a value of '38'). A blue 'Start Search' button is located at the bottom right.

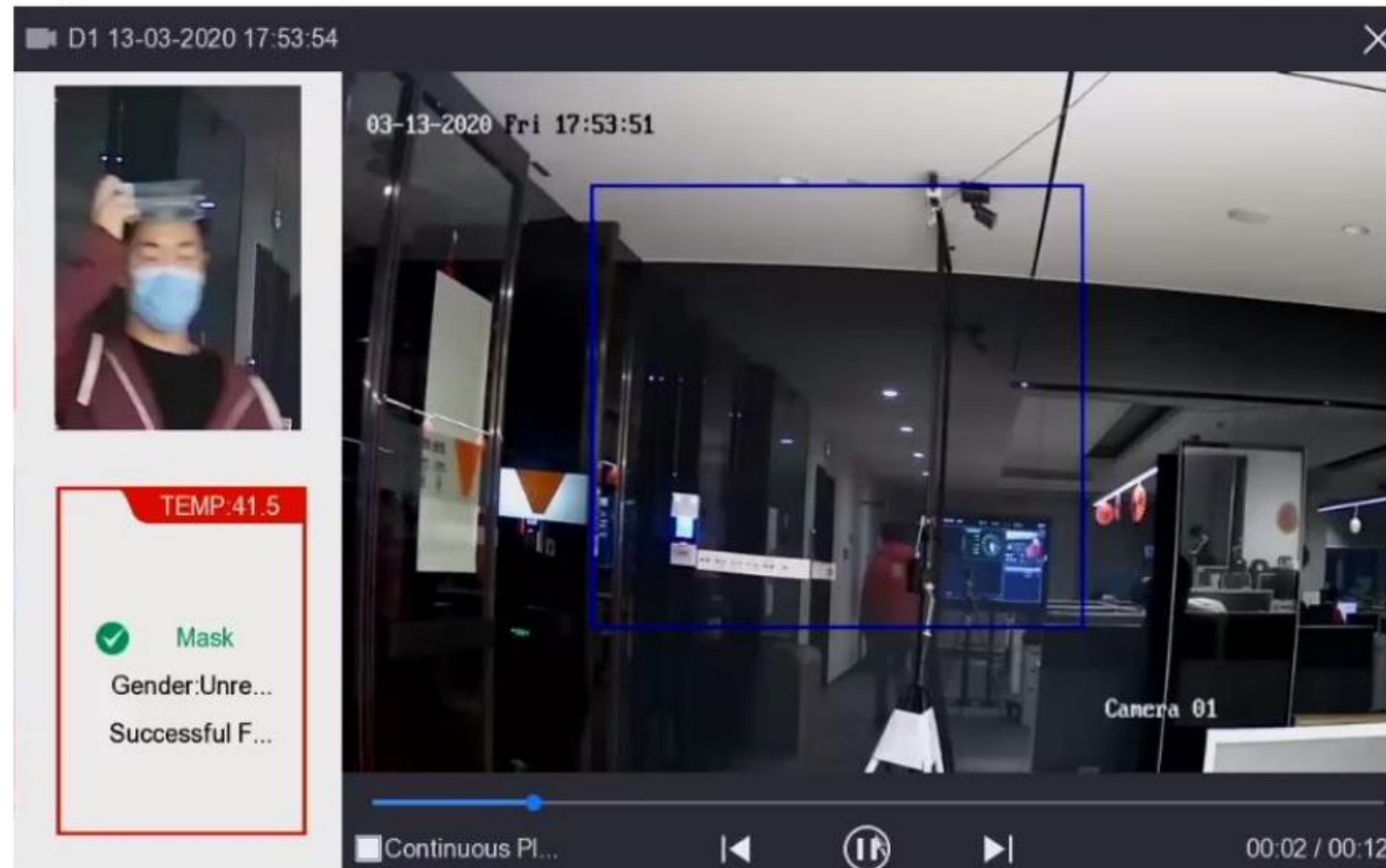
NVR Configuration

Step 2: The result will showed like below.



NVR Configuration

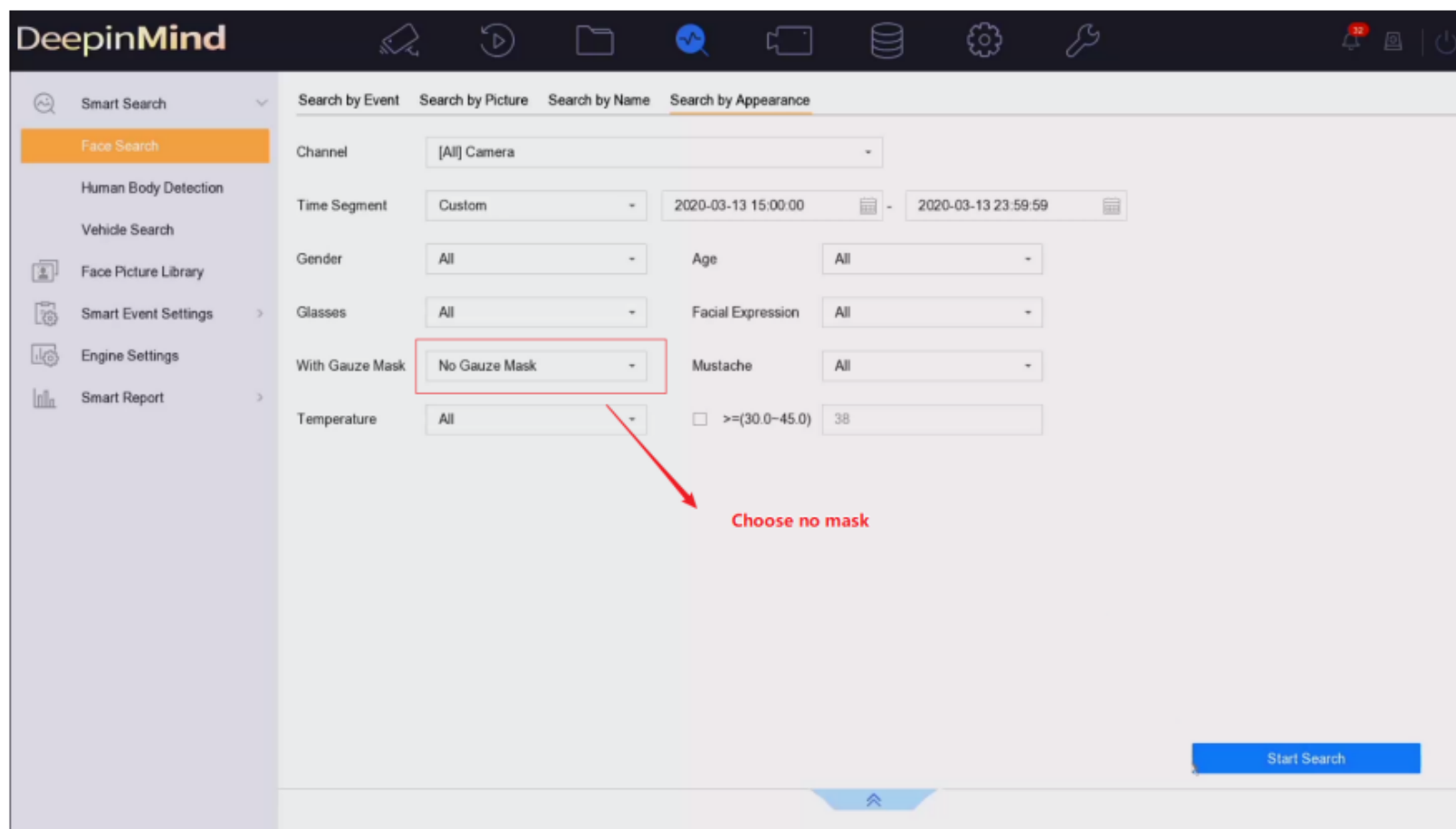
Step 3: Double click to show the detail and related record video.



NVR Configuration

4.2.2 Search by mask status

Step1: Go to smart analysis-Smart search-Face search, choose no mask and start search.

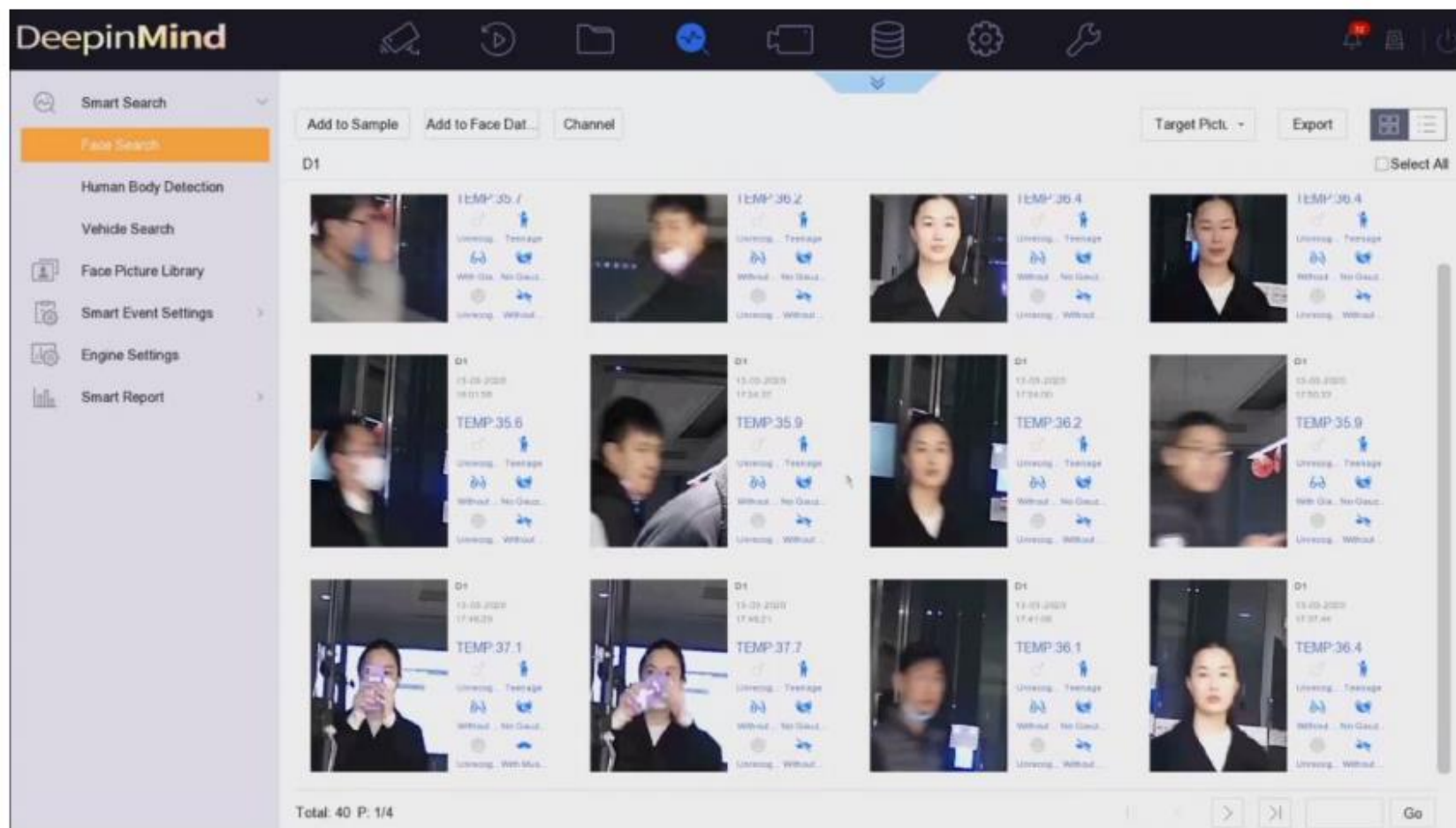


The screenshot displays the DeepinMind NVR configuration interface. The left sidebar shows the navigation menu with 'Face Search' selected. The main panel is titled 'Search by Appearance' and contains various search filters. The 'With Gauze Mask' dropdown is highlighted with a red box, and a red arrow points to it with the text 'Choose no mask'. The 'Start Search' button is located at the bottom right.

Search by Event	Search by Picture	Search by Name	Search by Appearance
Channel	[All] Camera		
Time Segment	Custom	2020-03-13 15:00:00	2020-03-13 23:59:59
Gender	All	Age	All
Glasses	All	Facial Expression	All
With Gauze Mask	No Gauze Mask	Mustache	All
Temperature	All	<input type="checkbox"/> >=(30.0~45.0)	38

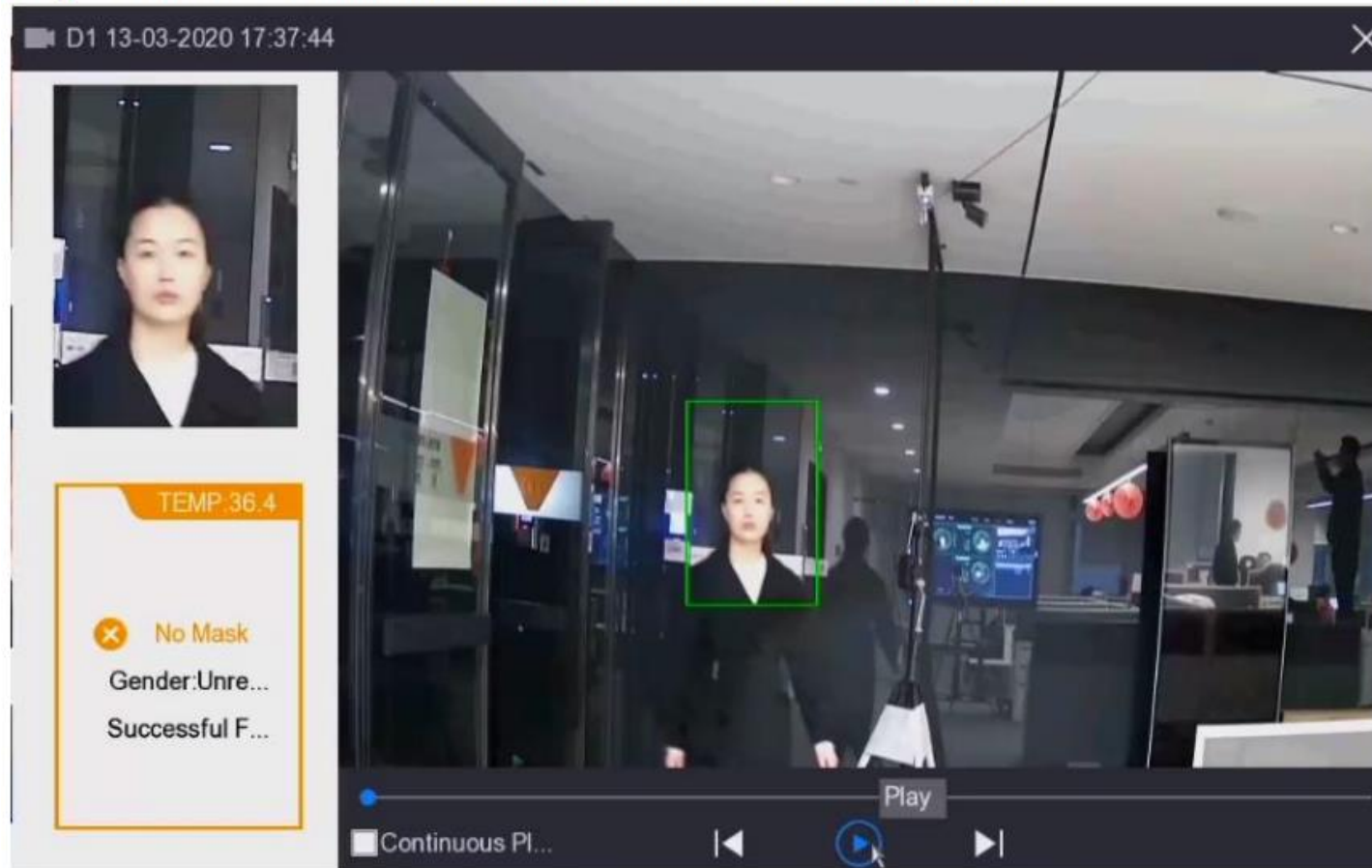
Start Search

NVR Configuration



NVR Configuration

Step 3: Double click to show the detail and related record video.





Thanks

See far, go further