2nd generation of DeepinMind NVR V4.40.400 Build200803 Release Notes

(2020-08-14)

Firmware Basic Information	Firmware Version:	V4.40.400 Build200803
	SDK Version:	V6.1.4.45_build20200525
	Play Library (PlayCtrl.dll)	V7.3.8.45
	Web version	V4.0.1 build200803
	Client version	V3.3.2.2 build20200728

Reason of Upgrade

Add new features and optimize product performance.

Required Software Platform

iVSM 4200: V.3.4 or above

HCP: V.1.7 or above

HC: V4.1 or above

New features

1. New feature – Support EzvizSDK2.0

1) Support connect the corresponding neutral cloud platform.

2) Resolve device connect platform with invalid history verification code.

3) Prohibit ABCDER devices from being added to the platform (those device with verification code ABCDEF cannot be added.)

4) Live view supports a maximum of 64 channels simultaneously

5) EZVIZ playback can support up to 4 channels, 1/4 times speed, 1/2 times speed, 2\4\8 times speed.

6) The maximum 64 + 4 stream encryption, stream format: H264、H265、SmartH264、SmartH265.

7) It supports PTZ preset point control, intercom with IPC and manual capture, supports upgrade device by platform integrated EZVIZ SAAS service (Grayscale upgrade or small scale upgrade), supports EZVIZ time synchronization.

Reminder: EZVIZ SAAS (Software as a Service, is a public cloud application service portal based on scenario intelligence like chain business, community, general education, logistics and other sub-sectors.)

8) It does not support video cloud storage, ant soldiers and one button do not disturb configuration.

2. Support intelligent application based on EZVIZ SAAS service component platform

1) EZVIZ SDK transmission mode integrates face library management and face data management (face library batch asynchronously import, face library addition, deletion and modification, human data user-defined ID).

2) EZVIZ SDK transmission mode (to HC, HCP) integrates face capture, face comparison, stranger, personnel frequency, perimeter protection, front-end mixed target capture, and back-end video structuralization alarm upload.

3) EZVIZ SDK transmits channel information of device and image center storage.

3. EZVIZ matching menu

1) Support process of EZVIZ/HC client scanning QR code to enter and add device.

Using HC as the example, you can scan the QR code from local GUI or web browser. For the web browser, go to Network -> Advanced Settings -> Platform access, and choose Hik-Connect as the platform access mode. Then click the "View" as shown below, and the QR code of the device will appear. You can add the device directly from your HC by scanning the QR code.
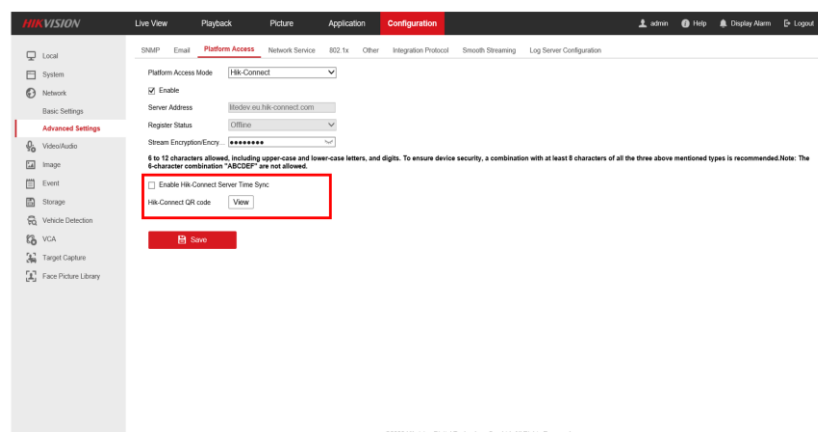
2) Support general browser to scan QR code and pop up app download page.

4. Support ISUP 5.0 protocol

For DeepinMind NVR support ISUP 5.0 protocol, you can add them to the HCP by ISUP protocol after entering device ID and key.

Before you start, make sure the devices have connected to the network properly.

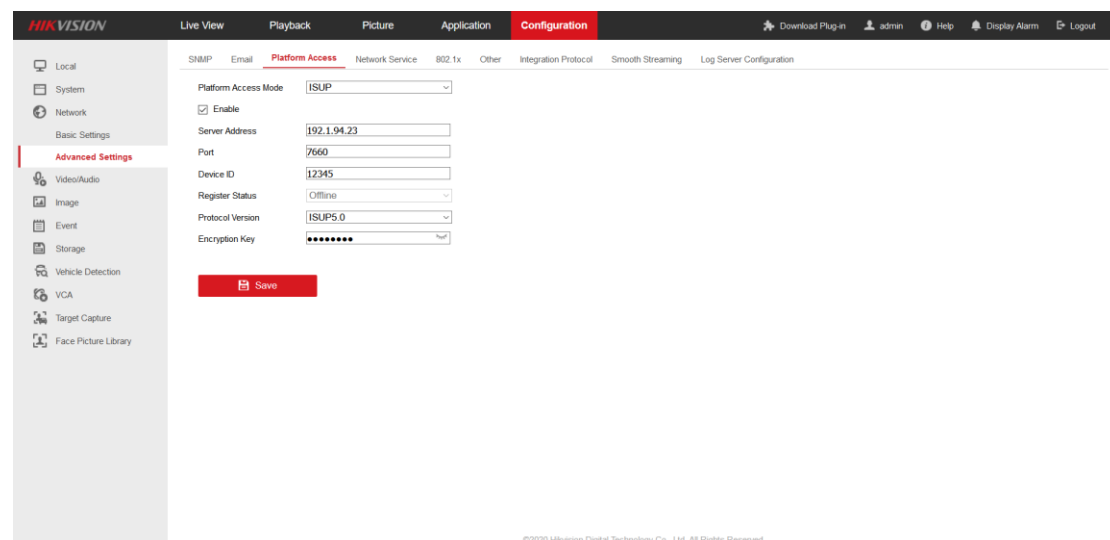Steps 1. Go to NVR site firstly

- Go to Network -> Advanced Settings -> Platform Access, choosing Platform Access Mode as "ISUP". (Device will reboot when Hik-Connect turn to ISUP).
- Enter the required information

    Server Address: the address where the HCP locates

    Port: 7660 is set by default

    Device ID/Encryption Key: set by yourself

Steps 2. Add DeepinMind in HCP

- Click Physical View -> Encoding Device to enter the Device Management page
- Choosing "Hikvision ISUP Protocol" as the access protocol
- Enter "Device ID" and "Key" set before
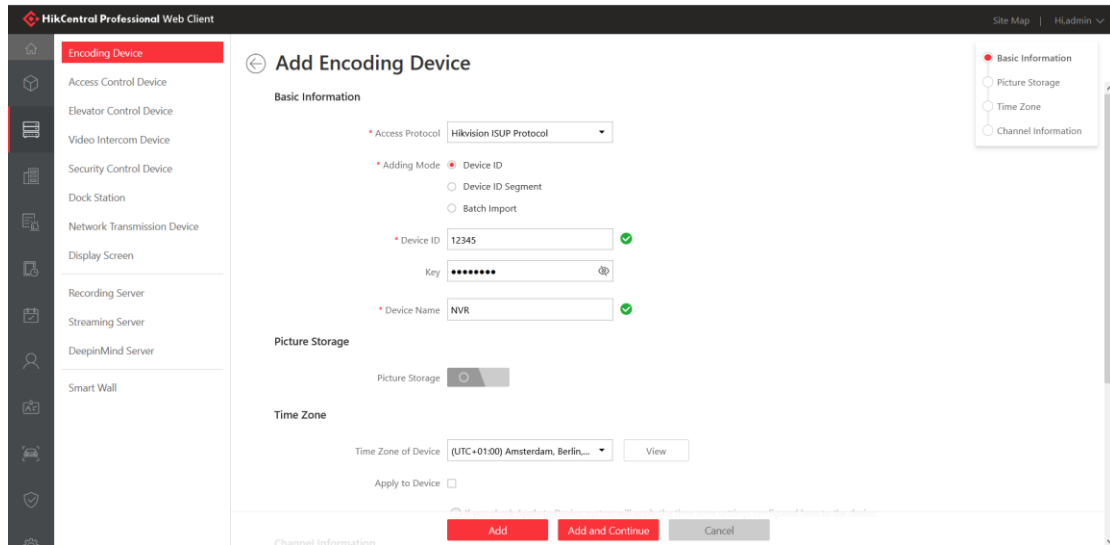
Reminder: you may need to close your computer's firewall in order to realize this function.

1) Device will reboot while ISUP 5.0 turn to Ehome 2.0/2.6.

Reminder: ISUP is the new name of Ehome.

2) Add a serial port command, the bit stream can be switched between RTP and PS, and the device will reboot; the default format of bit stream output is RTP.

3) The secret key rules: cannot be set to null and ABCDEF.
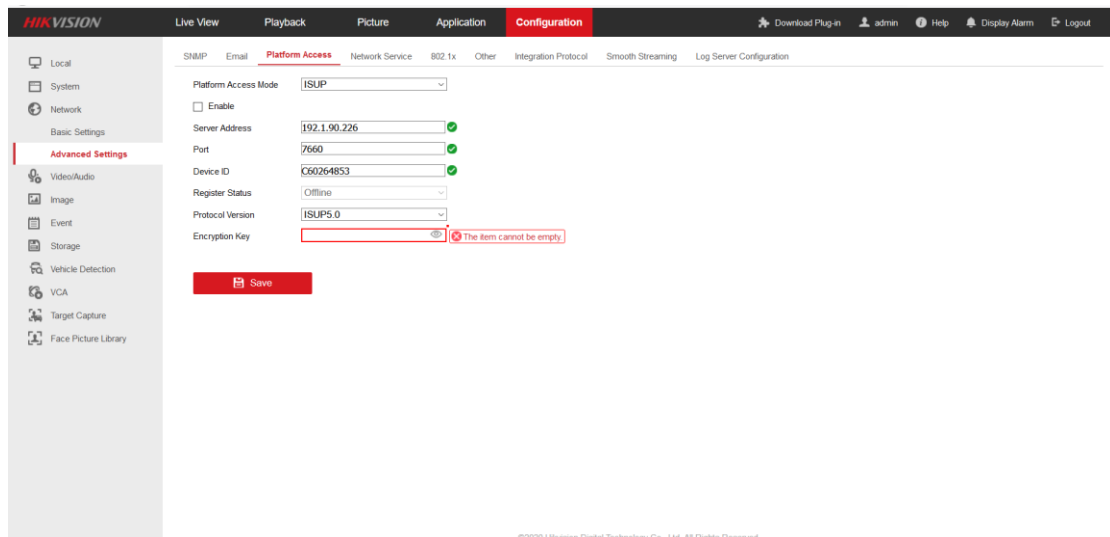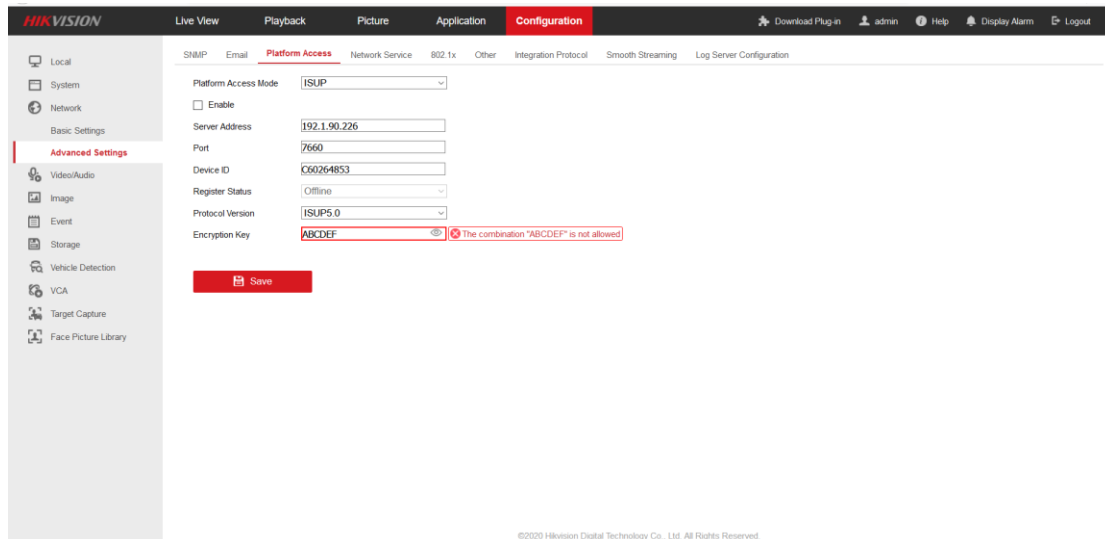
4) Video playback by file is not supported.

5) Support the voice intercom between the platform and IP channels on the device, support the platform to capture pictures through protocol linkage, and upload the captured pictures to the Wuhan cloud platform (maximum of 5 in 1 second).

5. Support ISAPI protocol transmission based on ISUP 5.0

Achieve intelligent functions by ISAPI transmission

1) Maintenance of device.

2) IO.

3) Resource status of device.

4) Video capability.

5) PTZ capability.

6) Recording capability.

7) Face distribution and image import.

8) Video event capability.

9) Intelligent event configuration.

6. Support analysis function of real-time video structuralization.

1) Support configuration of video structuralization.

2) Optimized the algorithm.

3) Vehicle, non-motor vehicle and human target extraction and retrieval, achieve alarm upload extension of the human body and vehicle attributes.

Please go to Smart Analysis -> Engine Settings -> Engine Configuration and set the engine in advance.

DeepinMind provides three types of engine modes, including Facial Recognition (for face related analysis), Video Structuralization Real-Time (for multi-target type detection) and perimeter protection (for human/vehicle detection, reduce the false alarm for line crossing, intrusion, region entrance, region exiting).
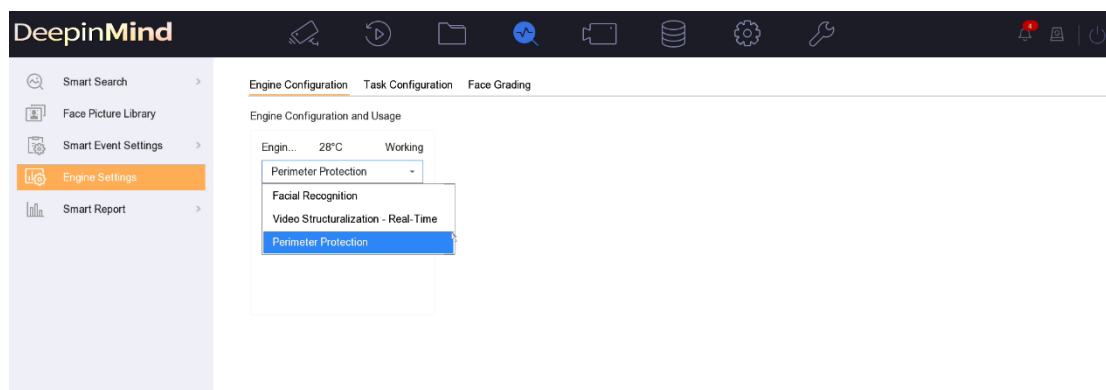
In order to realize the human target extraction and receive attributes, you can select "Facial Recognition (for face related analysis)" or "Video Structuration Real-Time". For extracting vehicles' attributes, Video Structuralization Real-Time should be chosen.

You can receive alarms (for human target extraction) in live view as the example provided below:
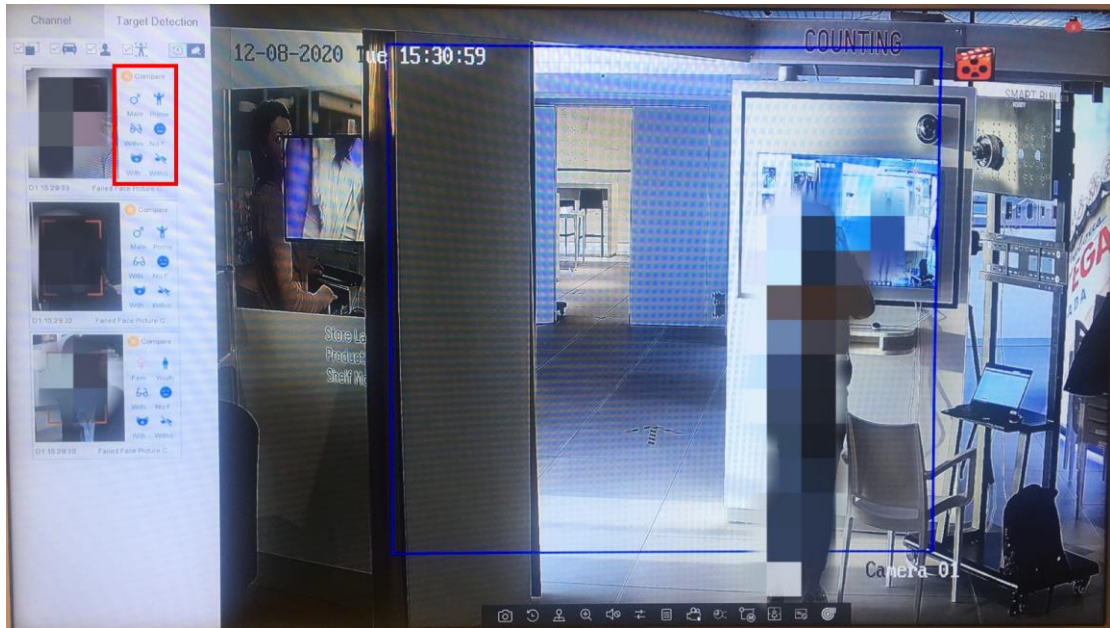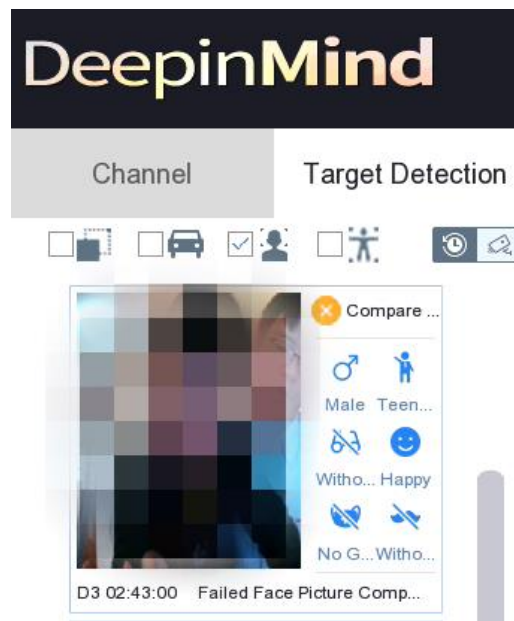
For detecting vehicles, the cameras can recognize several attributes including color, type, brand, moving direction, country and etc., while currently, the NVR site only can receive part of attributes as shown below:
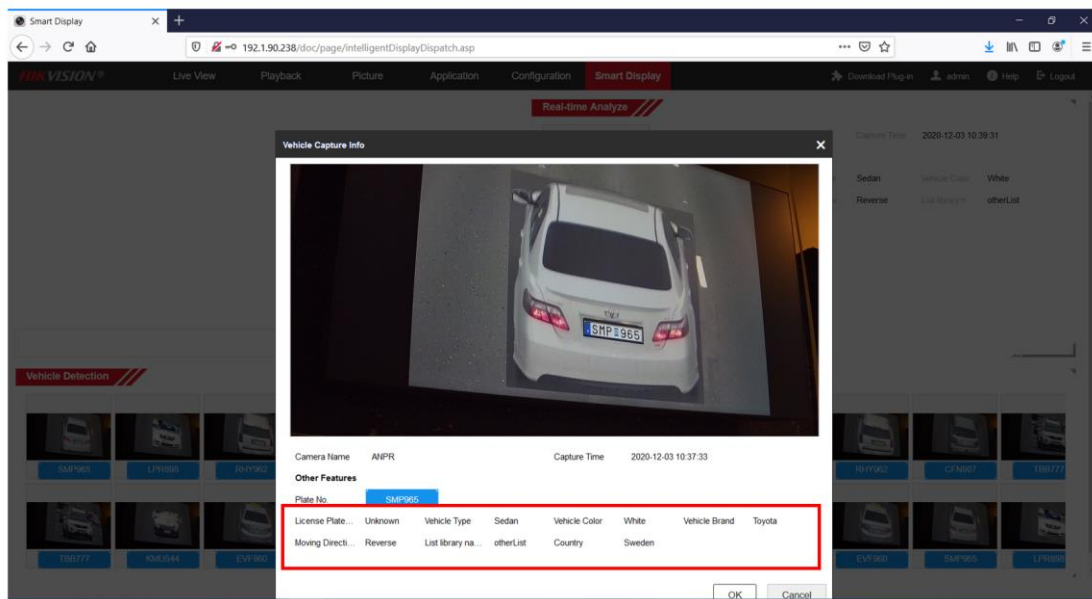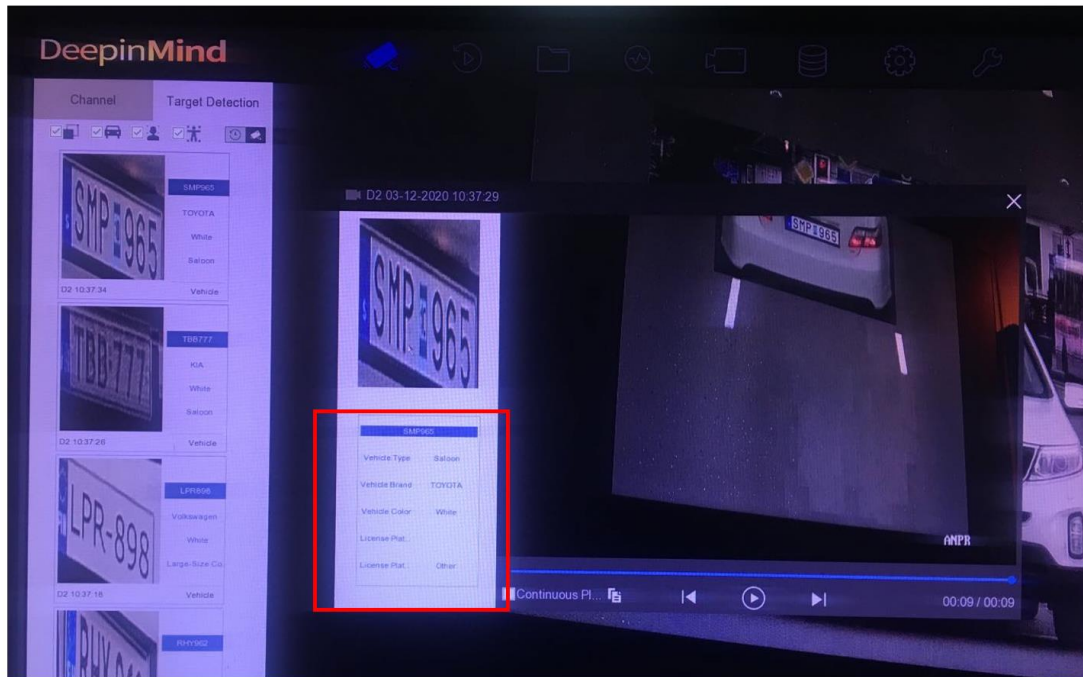
4) Face comparison and black and white list of vehicles based on video strcturalization.

5) Solve the problem that the model of low version algorithm can't be compared with the model of high version and search image by image.

7. Intelligent retrieval

1) Achieve asynchronous retrieval of face/human body images on remote platform.

2) Face retrieval speed improved (32G SSD iDS-76/77/9600NXI does not support it, while the current new models are all improved with 128G SSD)

3) Support asynchronous retrieval of human body via searching image by image.

4) Vehicle does not support local search image by image.

5) Support remote human body attributes and actual retrieval. The remote retrieval only supports 5 searches at the same time, and one local search can be performed while remote retrieval. The remote retrieval results can be retained for 30 minutes at most.

**8. SSD management**

1) Capacity distribution display in SSD.
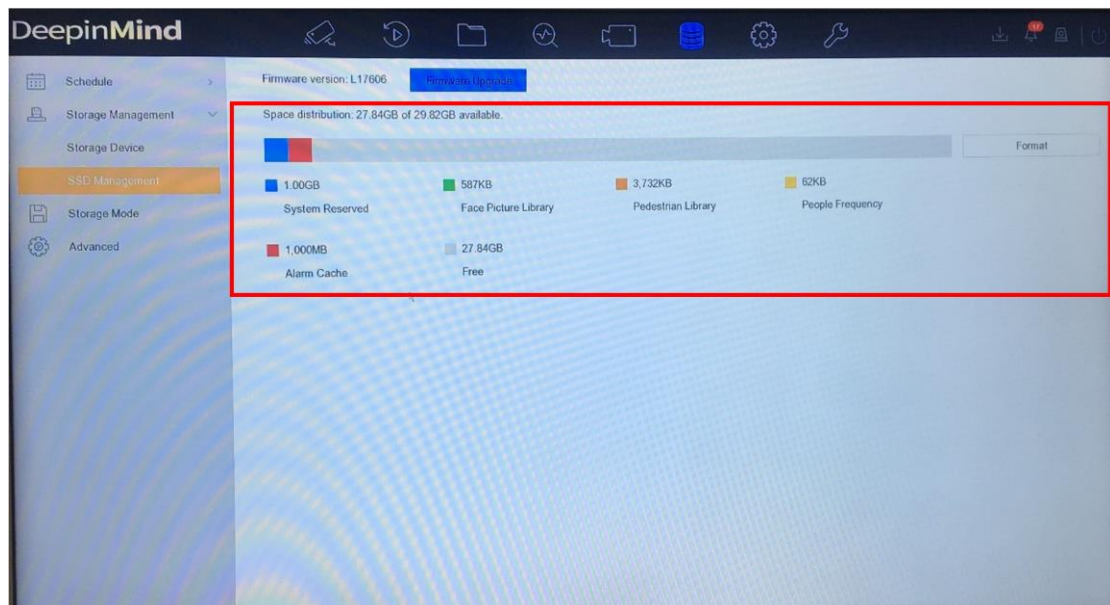
2) SSD Firmware can be upgraded together with software package or SSD Firmware can be upgraded separately. The upgrade package is not released to the public, only used by technical support personnel and R&D department.
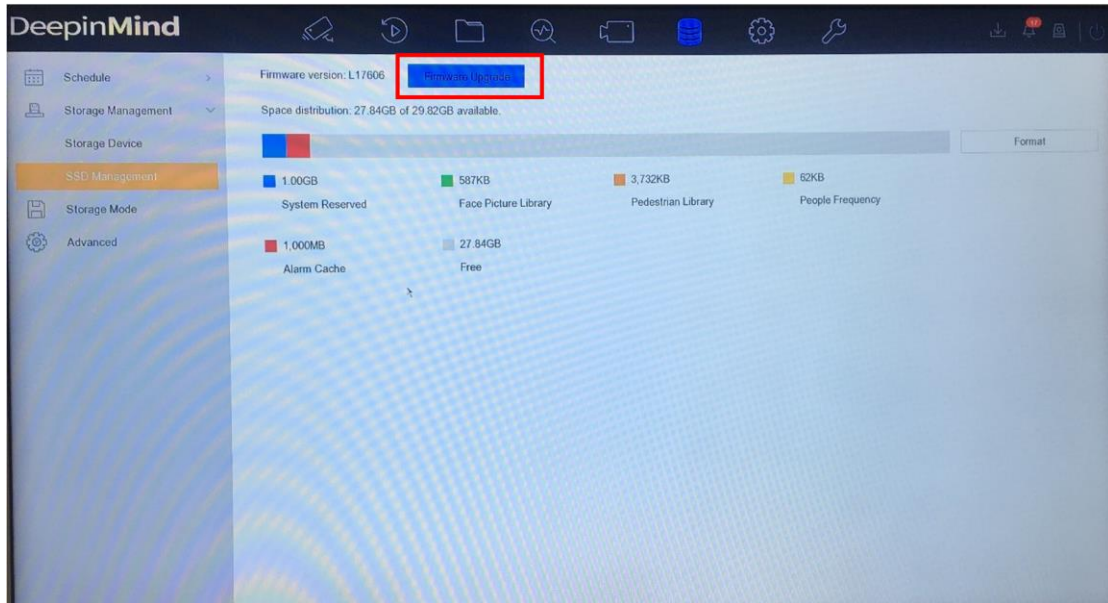
3) Operation log add SSD operation log: upgrade SSD record log.

4) Support format, initialization and other data maintenance operations, but only the admin user has permission to format and initialize.
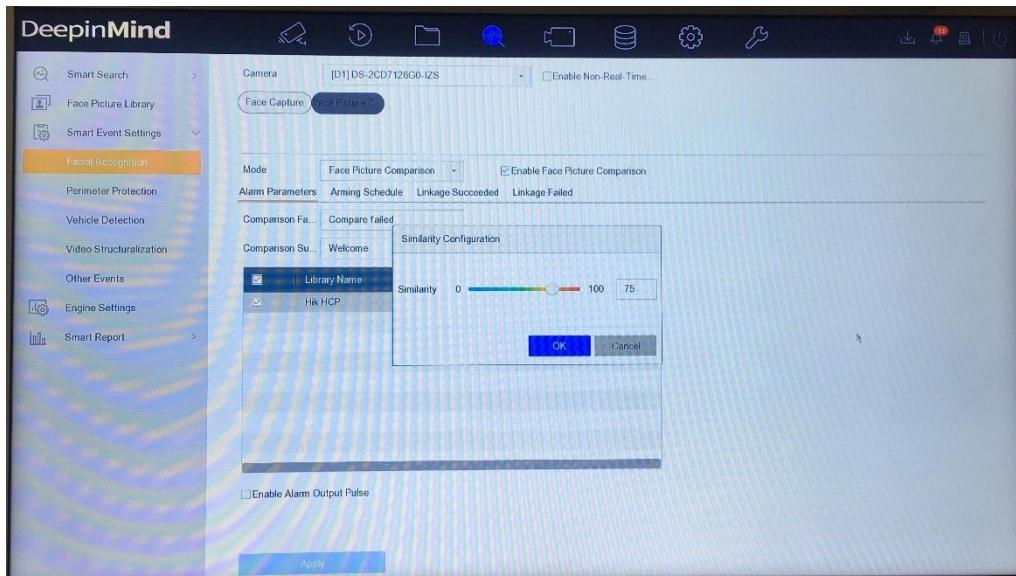
**9. Face capture by NVR.**
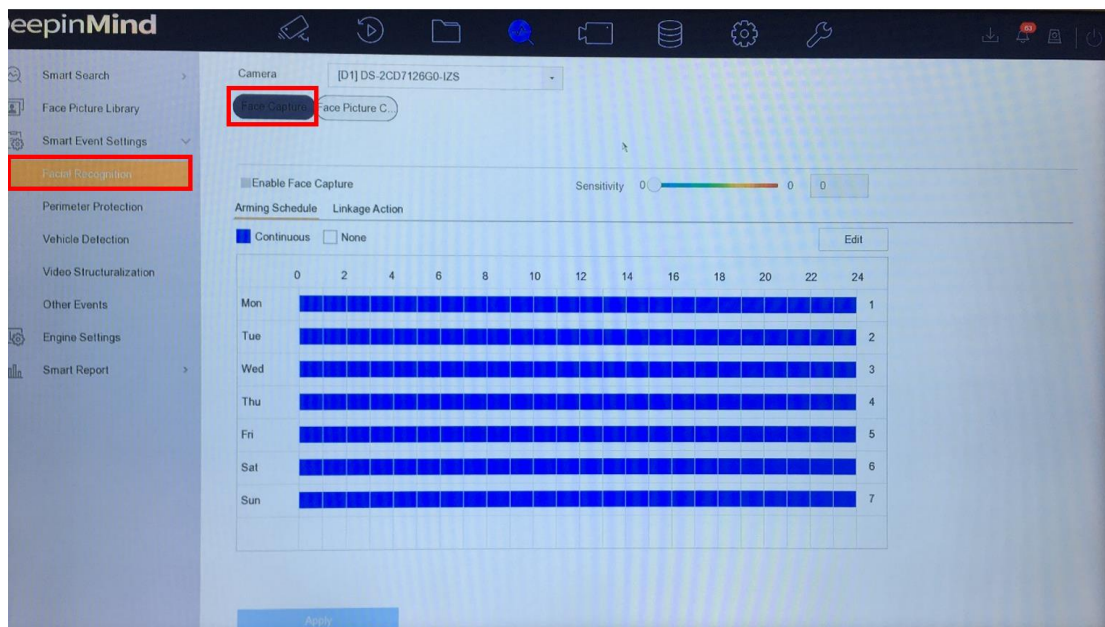
10. Face comparison by NVR

For face comparison：Please go to Smart Event Settings -> Facial Recognition -> Face Picture Compassion, and Enable Face Picture Comparison. You should put the face picture in the face library and link the library for comparison.
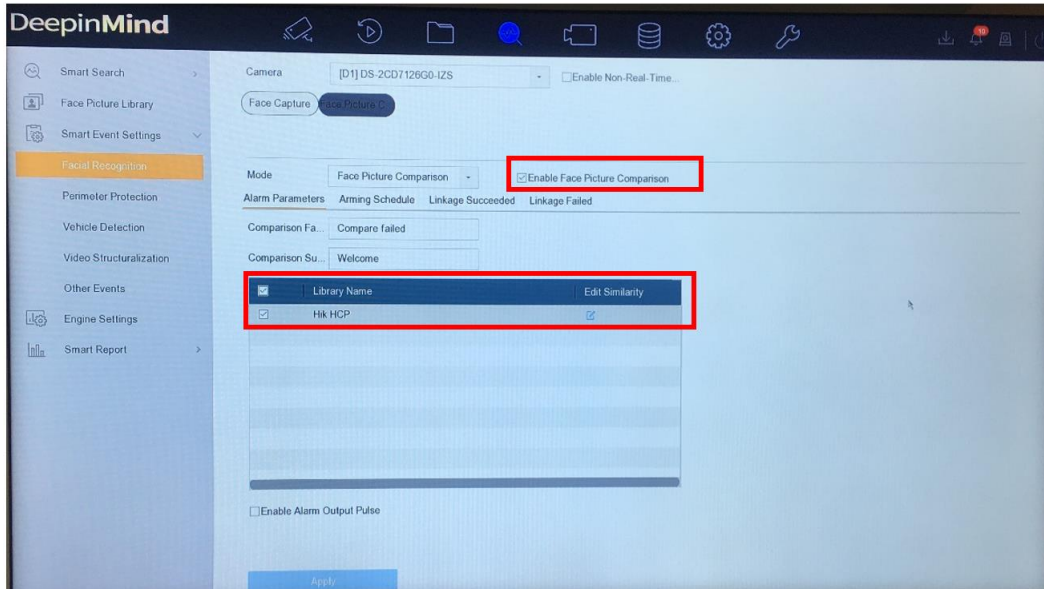
You can set similarity for face comparison as shown below.

You can then view the similarity from live view (target detection).
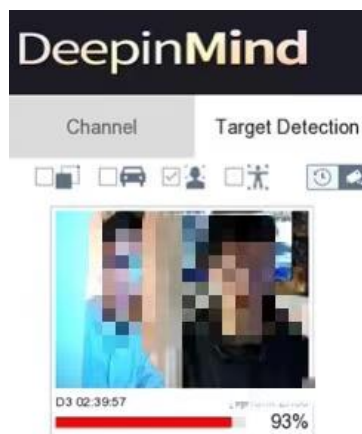
1) When the version is upgraded or degraded, the obsolete or unmodeled images will be remodeled.

2) Support serial port command one button forced remodeling, and the progress can be viewed.

3) The face scoring function is turned off by default. The face scoring parameters: pupil distance is 18 by default, pitch angle is 35 degrees, left and right angles are 55 degrees by default.

Reminder: Face grading is used for face picture selection. Pupil distance is the distance between two pupils. Tilt angel is the angle between your view and horizontal plane. Pan angle is the angle between your view and vertical plane. Larger pupil distance, smaller tilt and pan angle, better it would be for analysis.
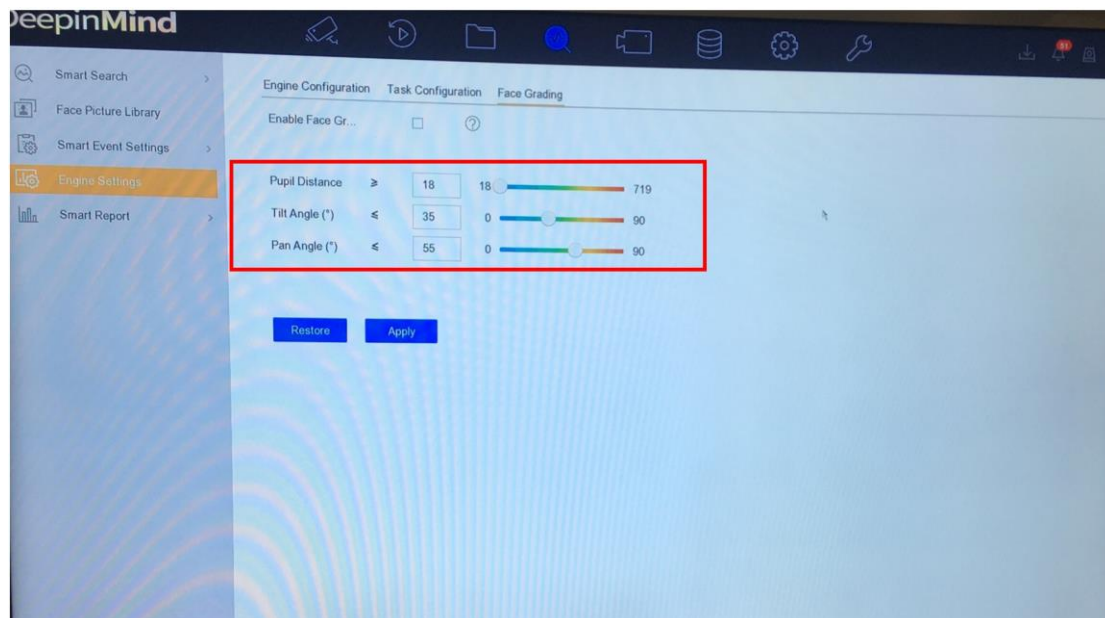

4) Face attributes of supporting the storage and alarm upload: gender (male, female), age group (infant, child, juvenile, adolescent, youth, middle-aged, middle-aged and elderly, elderly), wearing glasses (with glasses, without, with sunglasses), expression (neutral, happy, surprised, afraid, disgusted, sad, angry), mask (with, without), beard (with, without), as shown below (provided from local GUI).

With those attributes, you can do the smart search by appearance.
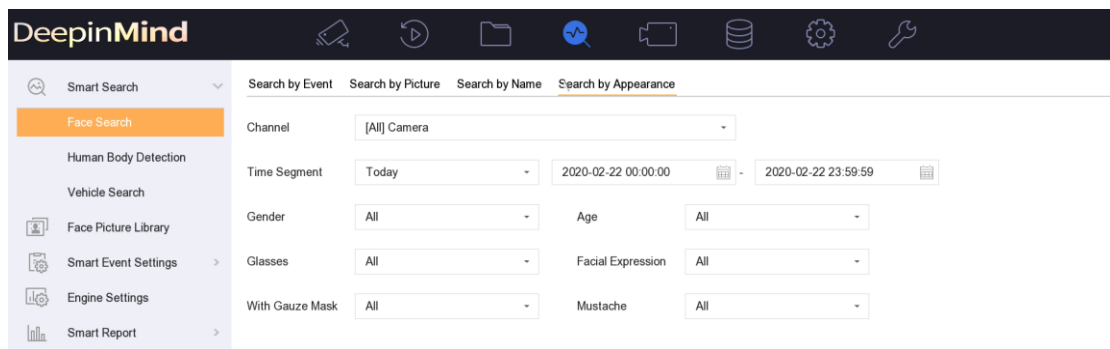
You can also search from 4200 based on face attributes：
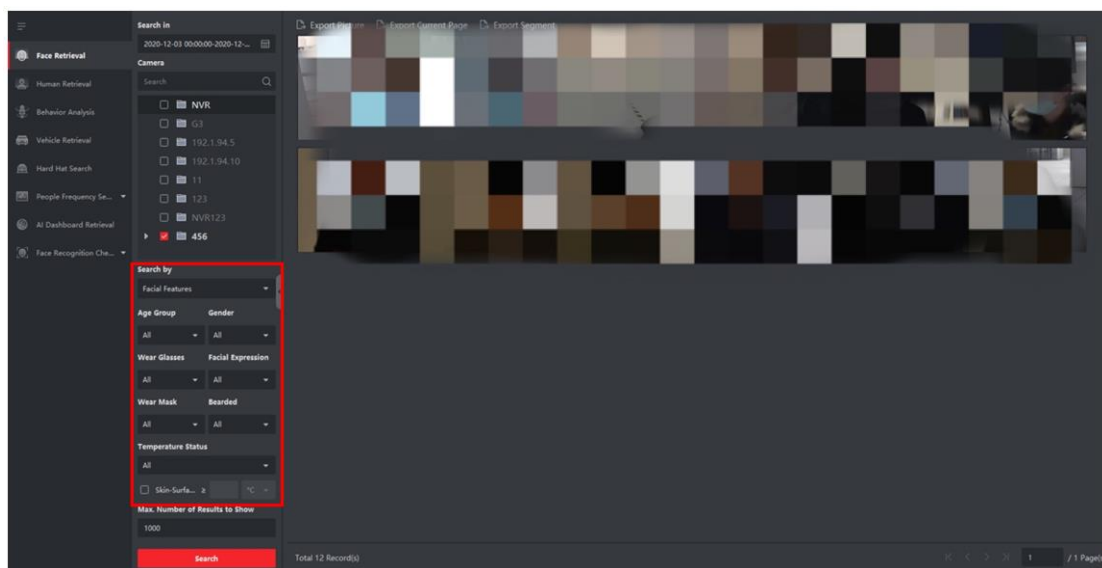
6. Support local GUI and remote platform for face comparison/Stranger alarm retrieval,

including:

- Search by Event: Search the specific Event type of specific channels during certain time period.

- Search by Appearance: Search the face/human body by certain attributes (Gender, top color etc.)

- Search by Name: Use the name to search certain person. The person need to be compared successfully and have a name in the face library.

- Search by Picture: upload face or human body pictures to search out the similar targets.
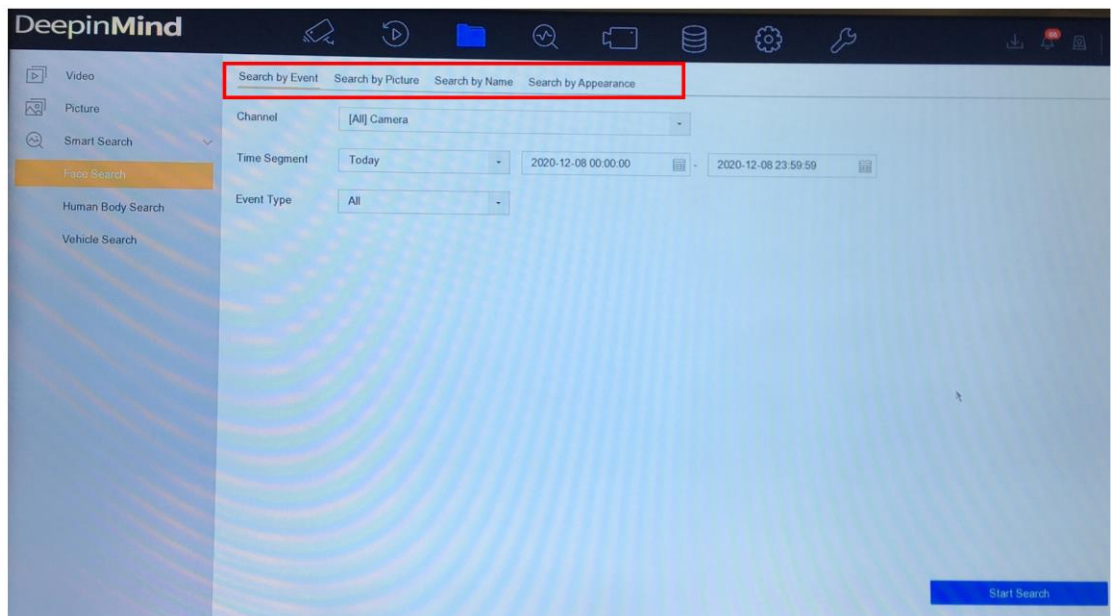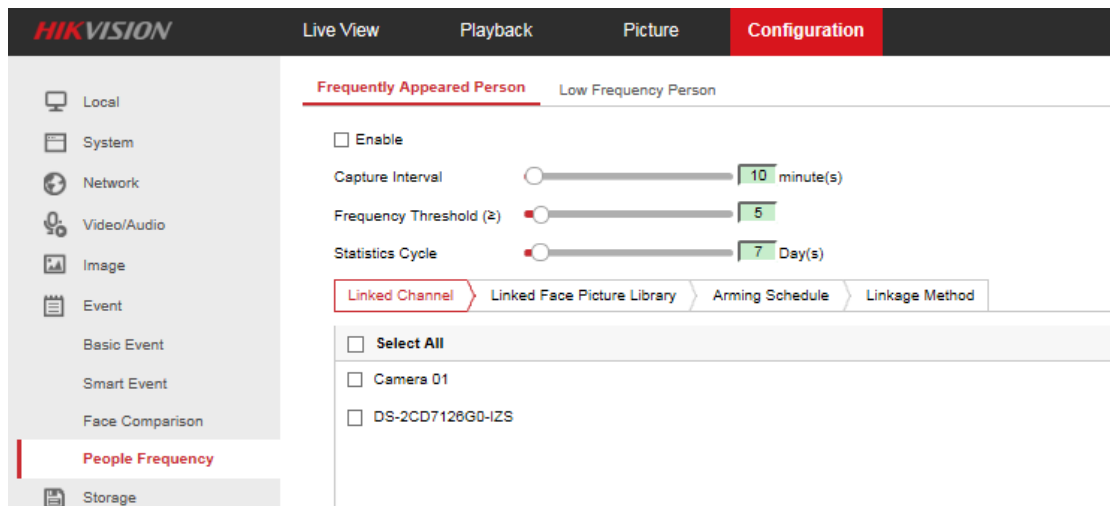

You can also do the smart search (search by event, search by picture, search by appearance, and search by name) from 4200 and HCP.
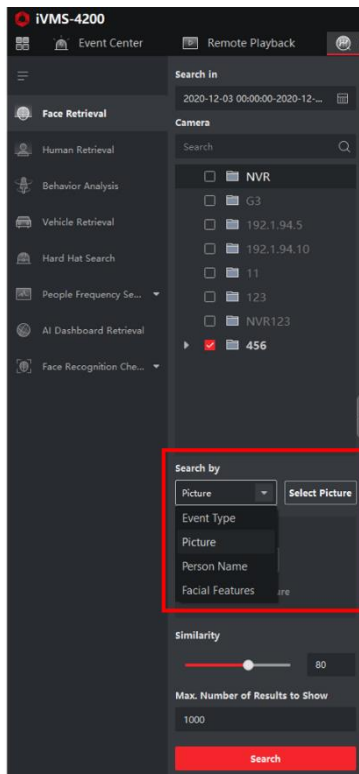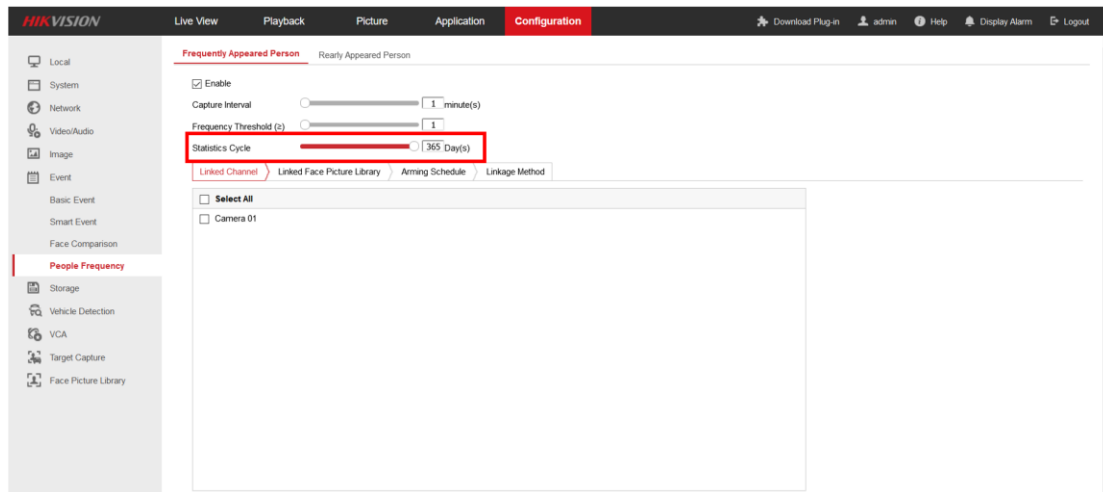
7) Support non real time face comparison and analysis of all channels.

11. Personnel frequency

1) High frequency statistical period

Previous 128G SSD iDS-76/77/9600NXI, the maximum cycle of high frequency is 365 days.

2) The maximum number of high frequency triggered alarms in a single day is 200 times, and it is only recorded as 200 times if it occurs more than 200 times.

3) Specifications of passers-by library:

In the 128G SSD of iDS-76/77/9600NXI, face library 100,000(10G), stranger library 100,000(10G), high and low frequency data (22G, statistical cycle 365 days);

In the 32G SSD of iDS-76/77/9600NXI, face library 100,000(10G), stranger library 100,000(5G), high and low frequency data (11G, statistical cycle 365 days);

4) When the version is upgraded/degraded, solved the problem that the images of passers-by library/alarm library are not modeled due to the algorithm version replacement.
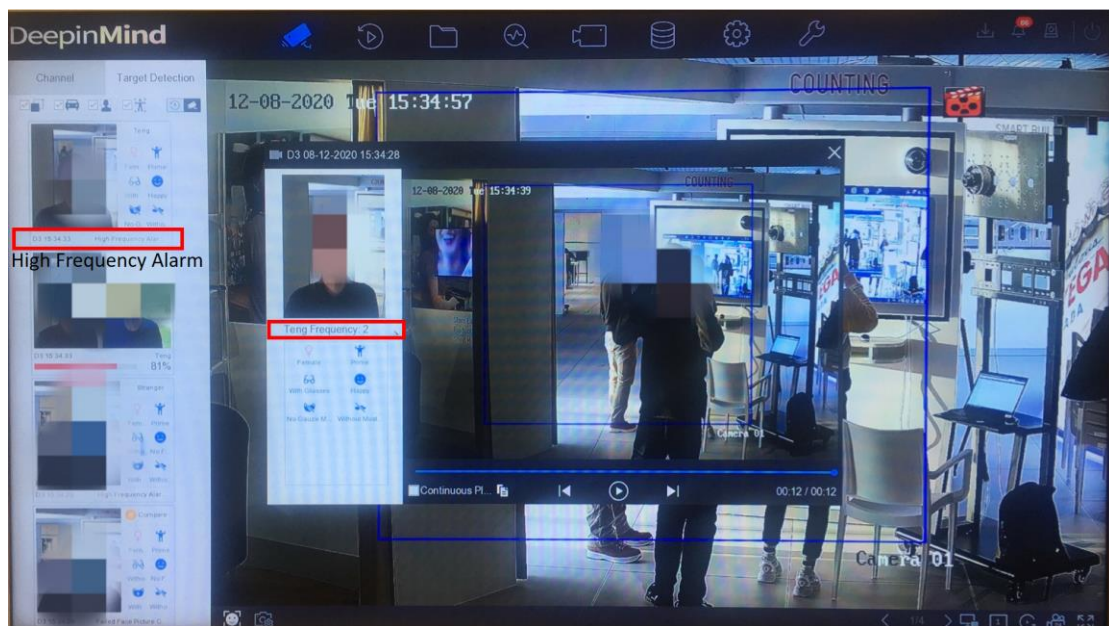
5) When the high-frequency alarm is turned on, the web browser or local GUI can view the frequency in the statistical period in real time.

In order to show the results, the parameters in here set as minimum as provided below.
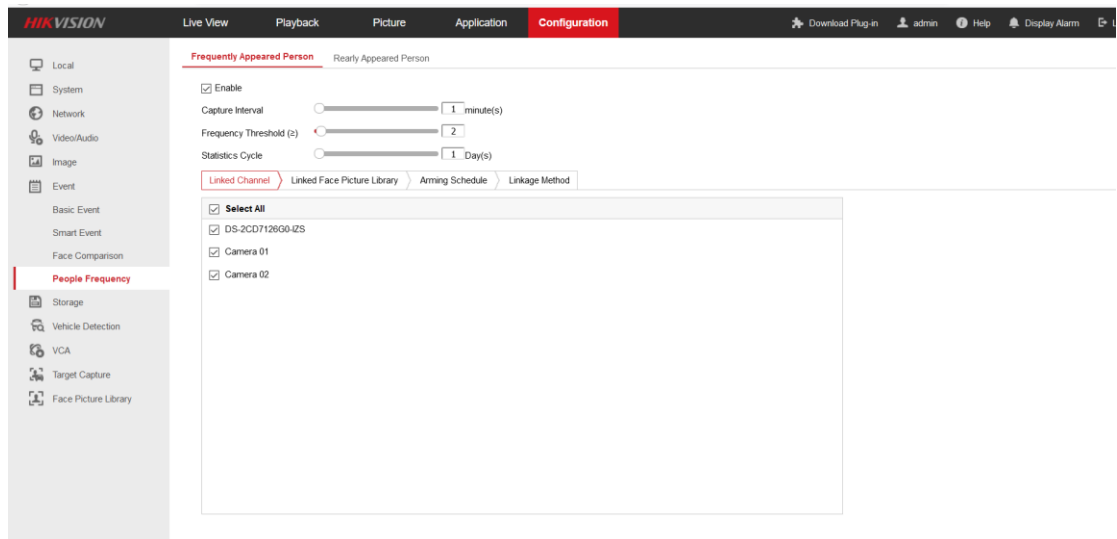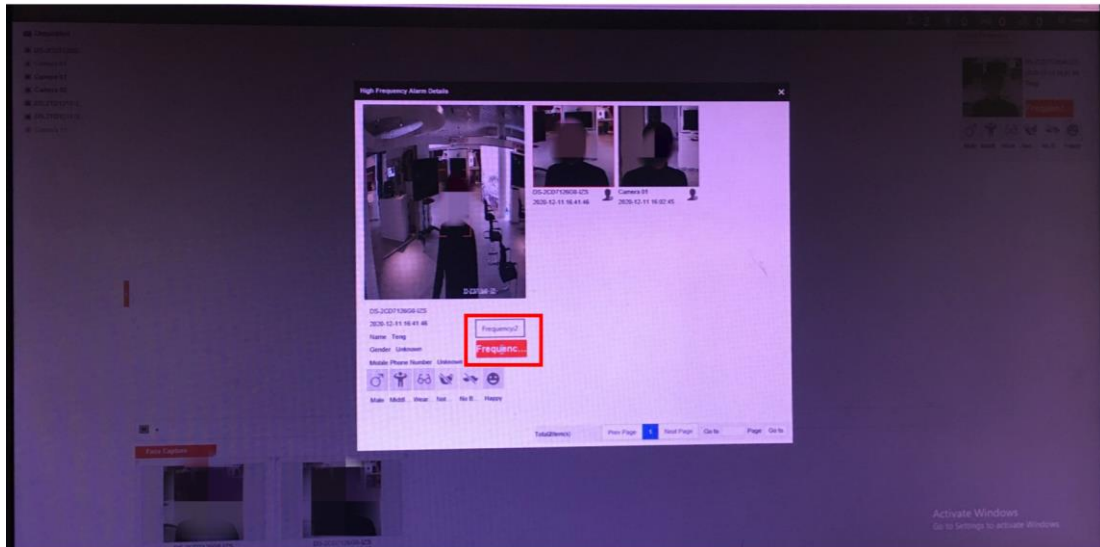
Then, the alarm high frequency alarm will be triggered when the same person appear twice in one minute from local GUI:
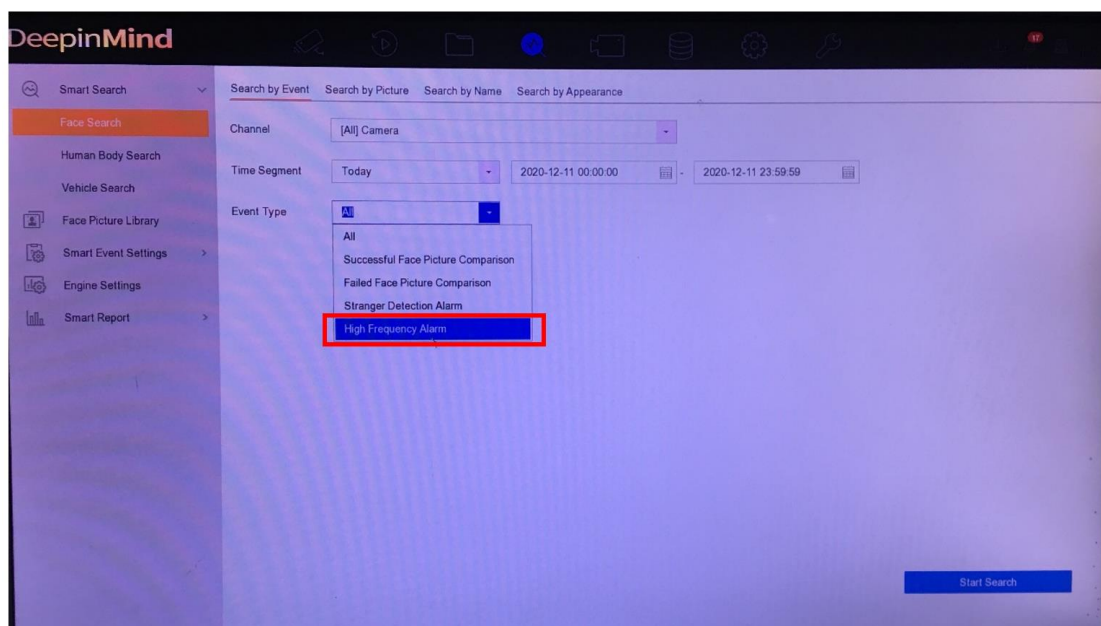

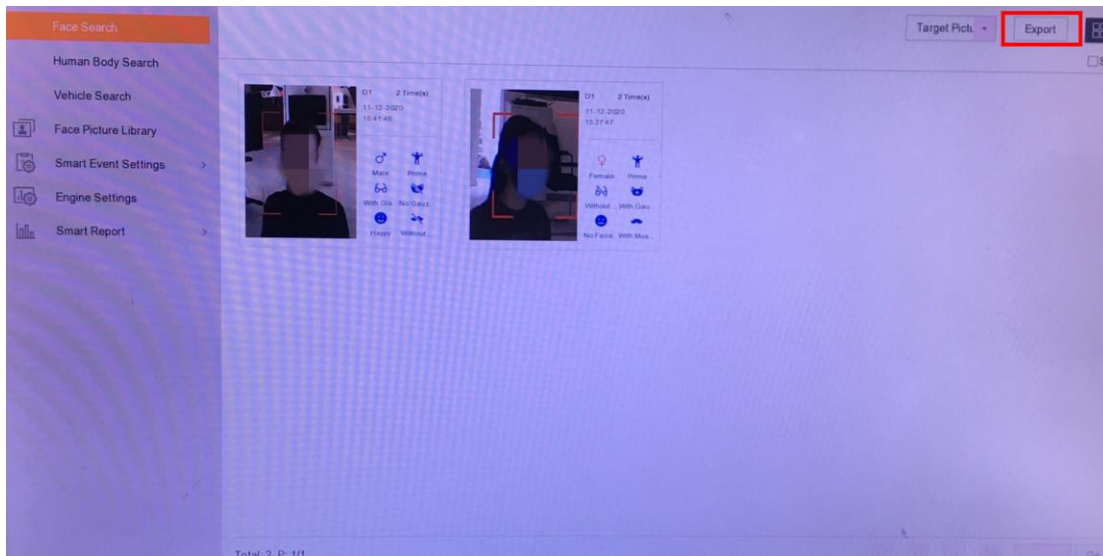You can also view the frequency alarm in web browser:

6) Support high frequency alarm retrieval and exporting report.

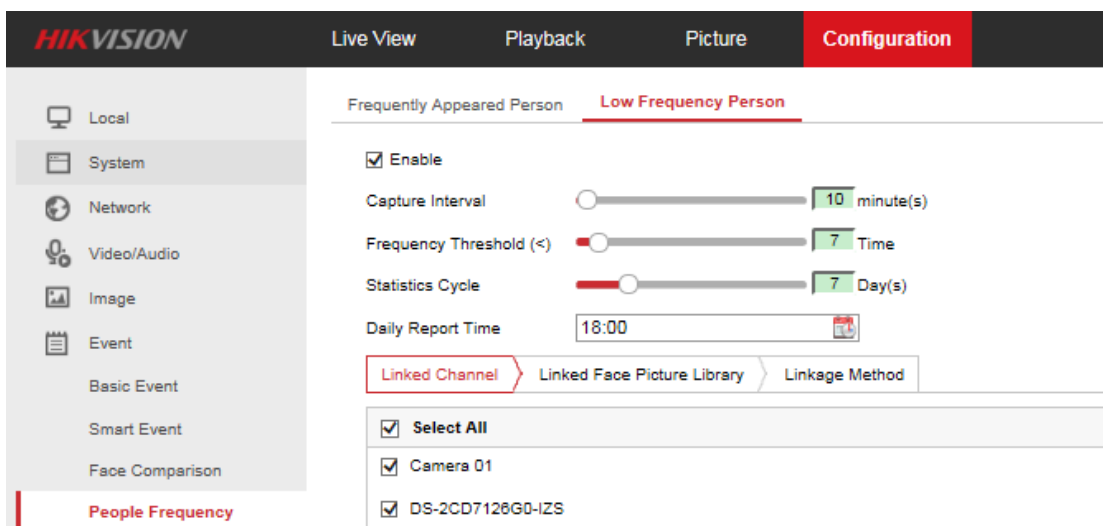Go to Search -> Face Search -> Search by Event, and choose "High Frequency Alarm" as the event type.

Click "Start Search", you can view historical high frequency alarms, click the required one and click "Export" to generate report.
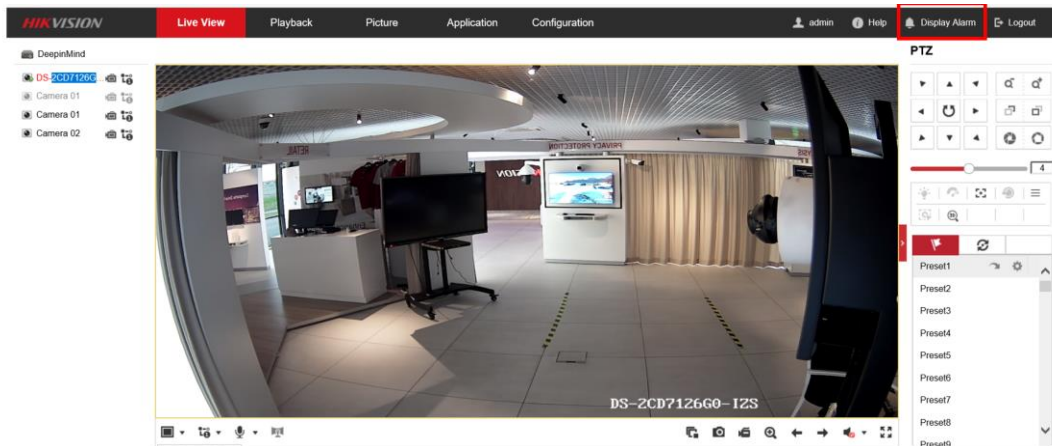
12. Low frequency statistical alarm

1) Support the configuration, trigger, display, retrieval and report export of low frequency alarm.
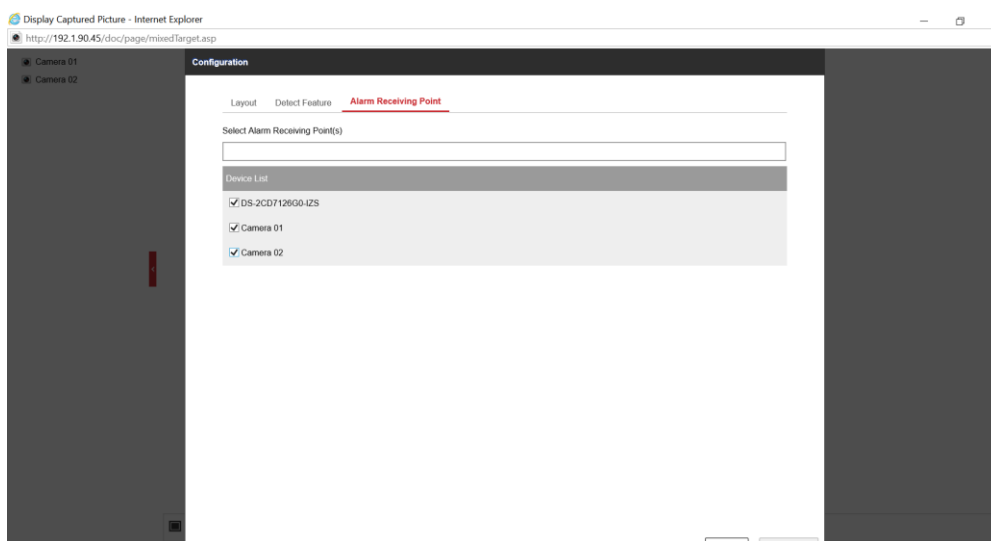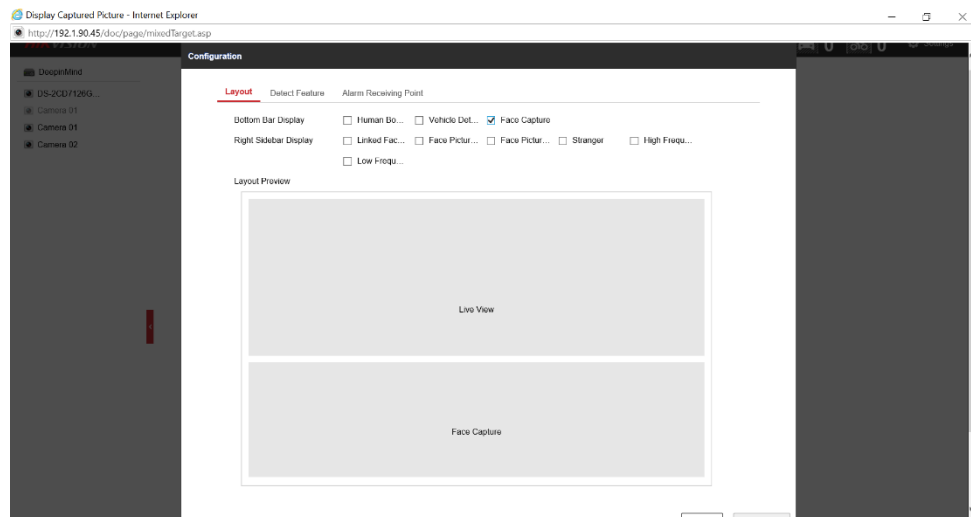

13. Alarm receiving display of browser

Please go to Display Alarm to receive alarm in NVR web browser.
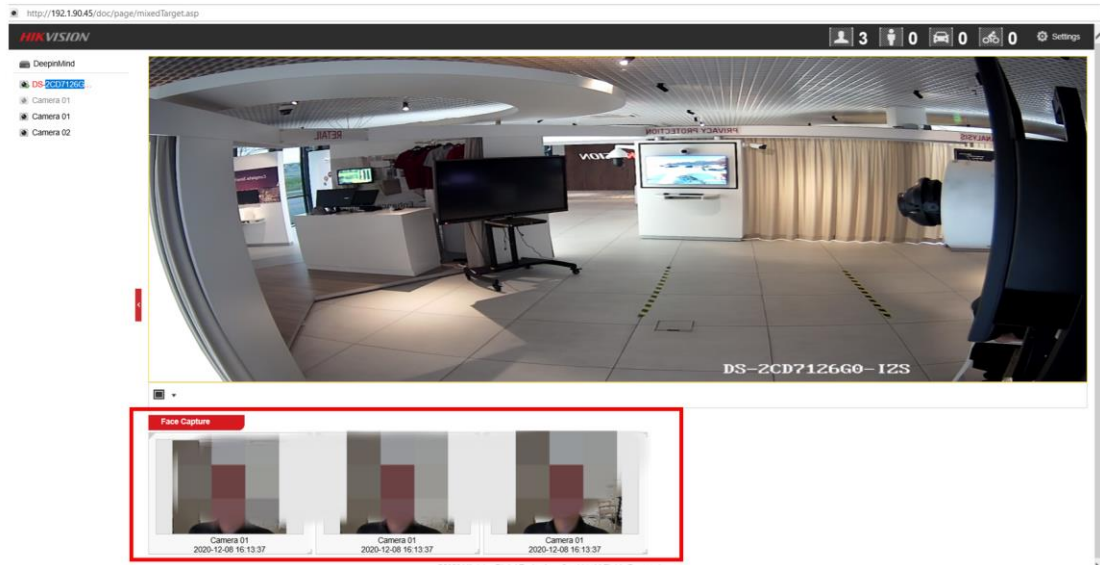
1) Support the configuration (e.g. Layout; Detect Feature and Alarm Receiving Point) of alarm reception.
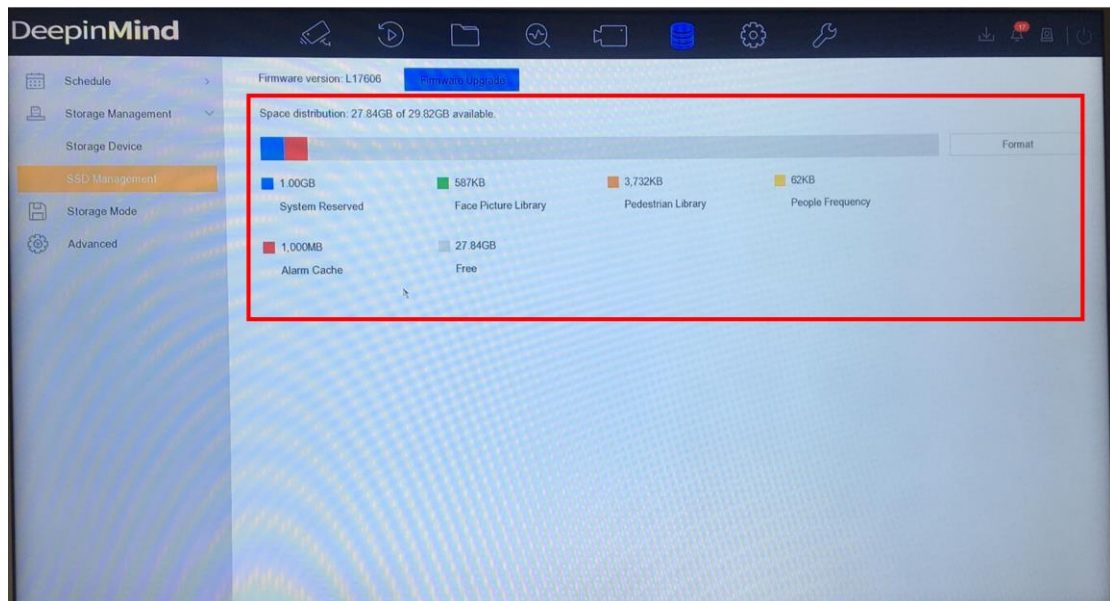

2) Support the reception and display of alarm related to face, human body, vehicle and non-motor vehicle.

Reminder: Please do the configurations (for example, selecting relevant receiving points) in advance to display the alarm in real time.
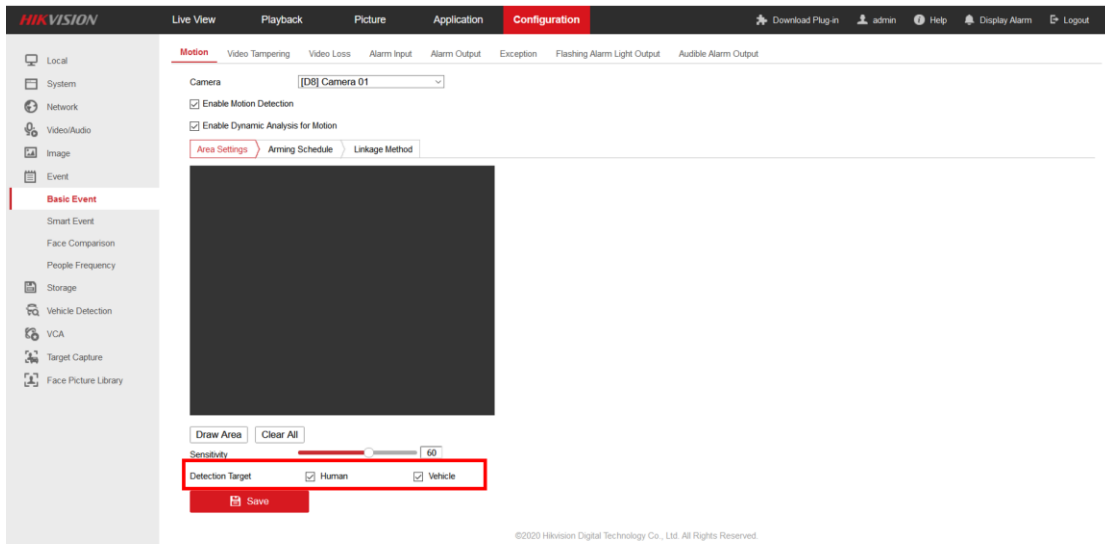

14. Support SSD smart information display

1) Support to view SSD smart information of local and Web.
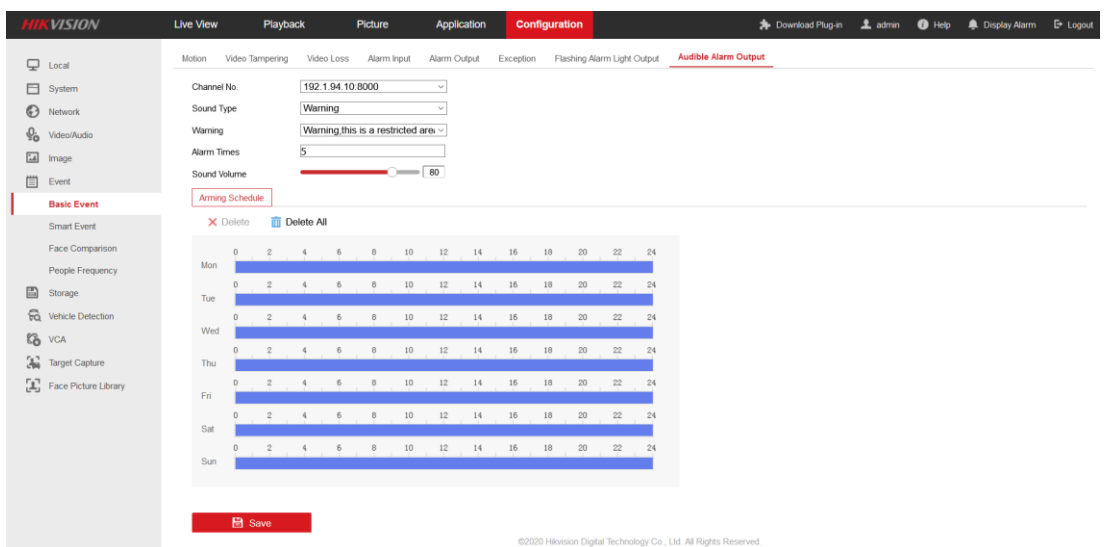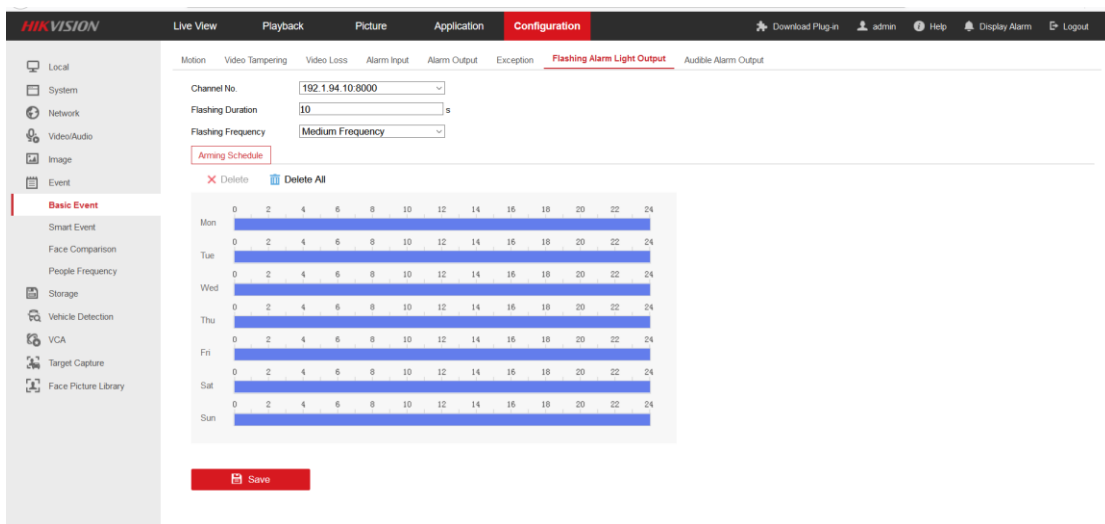

15. Access to IPC supporting Motion Detection 2.0
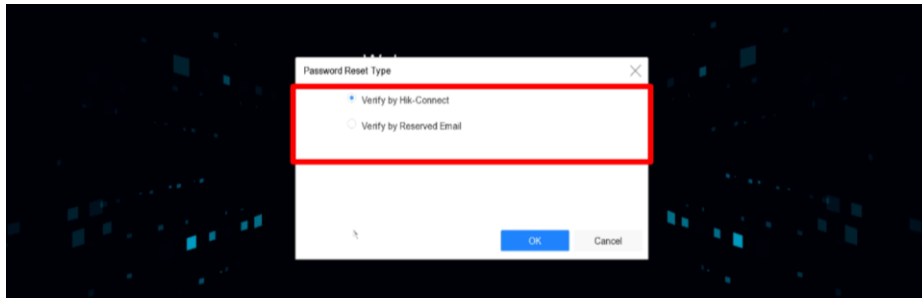
1) Support Motion Detection 2.0 configuration.

16. Support access to siren camera

1) Support sound and light configuration.

17. Support EZVIZ downlink transmission ISAPI protocol

18. Support password reset through HC/GV scanning device QR code

Please open HC and scan the QR code to get the verification code. Enter the code on the device (from local GUI) to finish resetting device password.

1) Only the NVR that has been bound to the HC will display the option to scan the code to recover the password.

2) Only the NVR-bound HC client account can successfully recover the password.

3) Only the local GUI supports this function (not for web browser).

19. Access to thermal camera

1) Access to front-end thermal temperature measurement alarm.

2) Access to front end thermal face capture temperature measurement alarm.
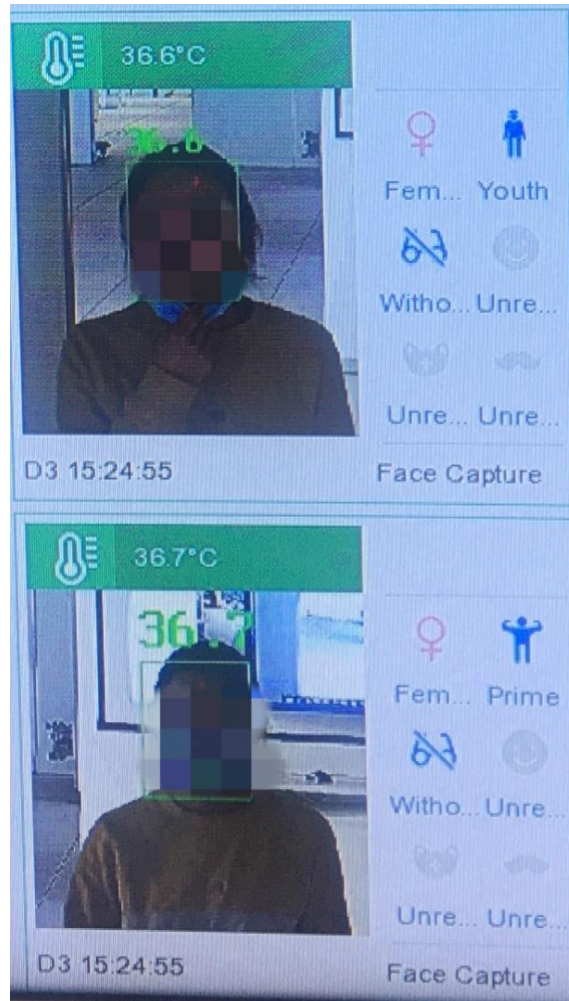
You can do the smart search based on temperature status or range from local GUI, 4200 and HCP.
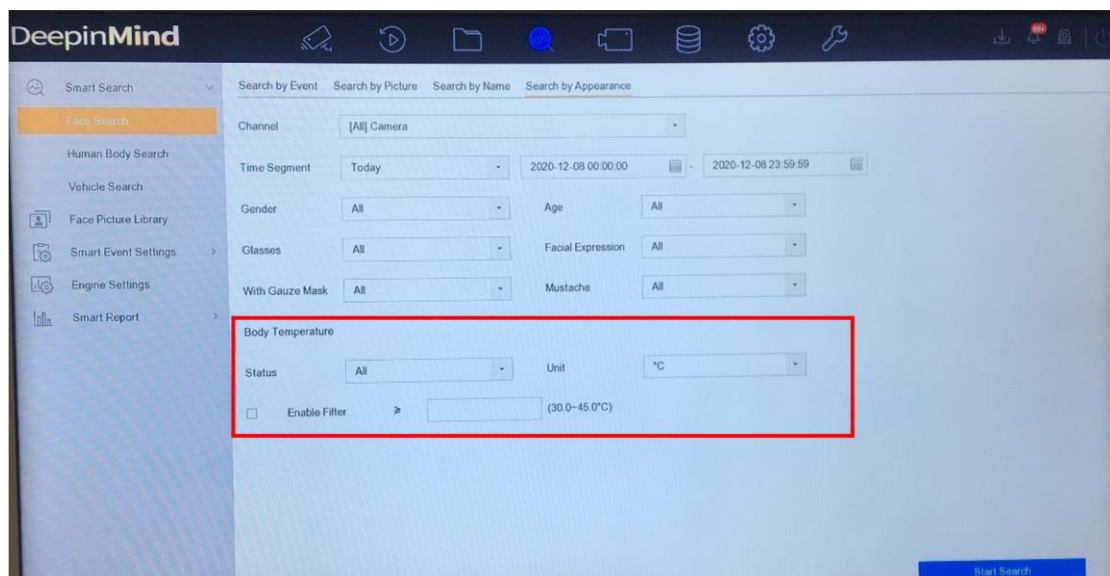
3) Support remote temperature real time data stream.

20. Support Chinese standard agreement

1) Support IPC to access NVR with GB28181 protocol through router or 4G network.

2) It can still access the NVR normally with GB28181 after the IP of IPC changes.

Modified functions

1. Fix the issue that the platform can't get custom added channel by Ehome protocol

2. Improved face intelligent platform access efficiency

1) Optimize the face library service error code.

2) Optimize Wuhan cloud image download and response message parsing logic.

3. Fix known problems

4. Important update

1) When the reserved mailbox is activated and edited by users, it can be saved successfully if the character of the mailbox is blank.

2) Black and white list English name adjustment: blacklist to blocklist, whitelist to allowlist.

3) Modified name of SSD Firmware package: GML is used if language is not distinguished, and GM is used if neutral/standard configuration is not distinguished.

4) Modify the enable configuration of SNMPv3 on the web page to ensure normal opening and closing.

Related product list:

2nd generation of DeepinMind NVR	Overseas (16/32/64 channels)
	iDS-9600NXI-I8/X(B)
	iDS-9600NXI-I16/X(B)
	iDS-9600NXI-I8/8F(B)
	iDS-9600NXI-I16/8F(B)
	iDS-9600NXI-I8/16S(B)
	iDS-9600NXI-I16/16S(B)
	iDS-7700NXI-I4/16S(B)(two HDMI)
	iDS-7700NXI-I4/16P/16S(B) (two HDMI)
	iDS-7700NXI-I4/X(B)(two HDMI)
	iDS-7700NXI-I4/16P/X(B) (two HDMI)
	iDS-6716NXI-I/16S(B)
	iDS-6708NXI-I/8F(B)

Customer Impact and Recommended Action

This new firmware upgrade is to improve product performance, and will take effect automatically after upgrading from previous versions. We'd like to inform you the above changes. Also, we are sorry for any possible inconvenience of use-habit changes caused by this action.

For questions or concerns, please contact our local technical support team.

Note:
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