HikCentral Professional V2.6.0

AE Specification

Contents

Chapter 1 Writing Standard

Division 28 - Electronic Safety and Security

Section 28 01 00 - Operation and Maintenance of Electronic Safety and Security

Section 28 01 30 - Operation and Maintenance of Security Detection, Alarm, and Monitoring

Chapter 2 General

2.1 Summary of Requirements

HikCentral Professional Platform

The System Management Service (SYS) provides unified authentication service for connecting with the clients and servers.

Related Requirements

1. Section 27 20 00 - Data Communications
2. Section 28 05 00 - Common Work Results for Electronic Safety and Security
3. Section 28 05 19 - Storage Appliances for Electronic Safety and Security
4. Section 28 05 19.11 - Digital Video Recorders
5. Section 28 05 19.13 - Hybrid Digital Video Recorders
6. Section 28 05 19.15 - Network Video Recorders
7. Section 28 06 20 - Schedules for Video Security
8. Section 28 21 00 - Security Cameras
9. Section 28 21 13 - IP Cameras
10. Section 28 27 00 - Video Security Sensors
11. Section 28 33 00 - Video Security - Security Monitoring and Control
12. Section 28 51 19.15 - Smart Walls

2.2 References

Abbreviations

1. AD - Active Directory
2. AGC - Automatic Gain Control
3. AWB - Automatic White Balance
4. BLC - Back Light Compensation
5. CIF - Common Intermediate Format
6. CD - Client Device
7. DDNS - Dynamic Domain Name Server
8. DHCP - Dynamic Host Configuration Protocol
9. DNR - Digital Noise Reduction
10. DNS - Domain Name Server
11. DSCP - Differentiated Services Code Point
12. DVR - Digital Video Recorder
13. FPS - frames per second
14. FTP - File Transfer Protocol
15. GIS - Geographic Information System

16. GUI - Graphical User Interface
17. HLC - High Light Compression
18. HTTP - Hypertext Transfer Protocol
19. HTTPS - Secure HTTP
20. Hybrid SAN - Hybrid Storage Area Network
21. ICMP - Internet Control Message Protocol
22. IGMP - Internet Group Management Protocol
23. IP - Internet Protocol
24. JPEG - Joint Photographic Experts Group
25. LPR - License Plate Recognition
26. MicroSD - Removable Miniaturized Secure Digital Flash Memory Card
27. MPEG - Moving Pictures Experts Group
28. MWB - Manual White Balance
29. NAS - Network Attached Storage
30. NIC - Network Interface Controller
31. NTP - Network Time Protocol over Ethernet
32. NVR - Network Video Recorder
33. PIR - Passive Infrared Sensor
34. PoE - Power over Ethernet
35. POS - Point of Sale
36. PPPoE - Point-to-Point Protocol over Ethernet
37. PTZ - Pan Tilt Zoom
38. QoS - Quality of Service
39. ROI - Region of Interest
40. RSM - Remote Site Management
41. RTP - Real-Time Transport Protocol
42. RTSP - Real-Time Streaming Protocol
43. SD Card - Secure Digital Flash Memory Card
44. SMTP - Simple Mail Transfer Protocol
45. TCP - Transmission Control Protocol
46. UDP - User Datagram Protocol
47. UPnP - Universal Plug and Play
48. UVSS - Under Vehicle Surveillance System
49. VCA - Video Content Analysis
50. VMS - Video Management System
51. WB - White Balance
52. WDR - Wide Dynamic Range
53. SYS - System Management Service

2.3 Certifications, Standards and Ratings

Reference Standards

1. Network Standard:
   IEEE – 802.3 Ethernet Standards
2. Video Compression:
   ITU-T H.264 standard and ISO/IEC MPEG-4 AVC standard (formally, ISO/IEC 14496-10 – MPEG-4 Part 10, Advanced Video Coding), H.264+, H.265, and H.265+ encoding formats

2.4 Submittals

Product Data

1. Manufacturer's hard (physical) or soft (electronic) datasheets
2. Installation and operating manuals for any and all equipment required for a SYS (System Management System)
3. Manufacturer's warranty documentation

2.5 Qualifications

Requirements

1. This product shall be manufactured by an enterprise whose quality systems are in direct compliance with ISO-9001 protocols.
2. All installations, integration, testing, programming, system commission, and related work shall be done by installers who are trained, authorized, and certified by the manufacturer.

2.6 Delivery, Storage, and Handling

General

The product shall be delivered in accordance with the manufacturer's recommendations.

2.7 Licensing and Support Agreements

Requires no Software Support Agreements with the manufacturer.

2.8 Tech Support (STAYS THE SAME UNLESS WARRANTY TERMS HAVE CHANGED)

Support

Technical support shall be based in each area.

Chapter 3 Product

3.1 Manufacturer

Manufacturer:
No.555 Qianmo Road, Binjiang District, Hangzhou 310051, China
Phone: +86-0571-8807-5998
Web: www.hikvision.com

3.2 Service Description

HikCentral Professional System Management Service

SYS maximum capacity for devices management and event handling:

1. Manages up to 2,048 resources, including Encoding Devices, Access Control Devices, Elevator Control Devices, Security Control Device, Digital Signage Terminal, and Remote Sites
2. Imports up to 100,000 video channels (Network Camera or analogue/TVI)
3. Manages up to 64 Recording Servers per SYS
4. Imports up to 3,000 alarm inputs/outputs respectively per SYS.

Service Manager: An application that manages the following Services

1. System Management Service is the core component of HikCentral Professional, providing authentication, permission granting, and management services. It authenticates the Control Client access, manages the users, roles, permissions and monitors devices, and provides the interface for third-party system integration. It includes the following service:
   a. 3rd Party Device Access Gateway: Communication between SYS and third-party device
   b. System Management Service
      - Provide the unified authentication service for connecting with the clients and servers
      - Provides the centralized management for the users, roles, permissions, devices, and services.
      - Provides the configuration interface for security and management module.
   c. Management Service
      - The content server and signaling gateway of HikCentral Professional
      - Mainly responsible for storage of static pages and reverse proxy of device configuration
   d. Streaming Gateway
      - A component of SYS which forwards and distributes the video and audio data
      - Shall support up to 200 video channels @ 2 Mbps input and 200 video channels @ 2 Mbps output. It is used for concurrent live view or playback
      - Shall not be added to the web client as Streaming Server
2. Keyboard Proxy Service

   a. Used with network keyboard to access the Keyboard Proxy Service
   b. Network keyboard can be used for the live view operations on the smart wall
3. Smart Wall Management Service
   a. Manage smart wall for displaying decoded video on smart wall
   b. Responds to Control Client's request and sends real-time messages to Control Client

3.3 Accessibility and Management Capabilities

1. Up to 100 simultaneous Client Devices (CDs) shall be able to connect using a thin or full client via a Windows-based PC and 100 via an App on a smart phone (iOS or Android). There is no licensable client software or client software connection licenses required
2. Shall support Active Directory integration for user management of Control Client and Mobile Apps (iOS and Android mobile operating systems)
3. Administration functions and operation functions are performed separately in the following clients:
   a. Web Client: All administration of SYS shall be performed using a web browser client via LAN, WAN or Internet. No client software is required for administration of the system
   b. Control Client: All security operator features shall be accessed through the Control Client connected to SYS via LAN, WAN, or Internet
   c. Mobile Client: Basic security operator features shall be accessed through the Mobile Client connected to SYS via LAN, WAN, or Internet
4. Shall support H.264, H.264+, H.265, and H.265+ encoding formats
5. Shall support SUP management of license to ensure smooth upgrade of HikCentral Professional
6. Shall support Downloading logs from the Service Manager
7. Shall support multi-time zone and DST

3.4 Network

Security Access

1. Shall have a built-in password protection not dependent on server
2. The System shall have User Authentication
3. Secure Activation
   a. A system algorithm shall check the user defined password for strength, based on the manufacturer’s criteria.
   b. System shall determine and display password security level as “weak”, “medium”, or “strong”.
   c. Password shall contain a minimum of two kinds of characters (lowercase letters, uppercase letters, numbers and special characters).
   d. Only ASCII characters shall be allowed.
   e. Password length shall be eight characters minimum.

3.5 PC Requirements

HikCentral Professional SYS without RSM

- Minimum PC: Intel® Core™ i5-12500 @3.0 GHz
- RAM: 8 GB
- NIC: GbE network interface card
- Graphics Card: NVIDIA® GeForce® GTX
- Hard Disk Type: SATA- 7200 RPM Enterprise Class HDD
- Hard Drive Capacity: 650 GB for the HDD where SYS service is installed
- Other: Microsoft® Windows 8.1 (64-bit)

For HikCentral Professional SYS with RSM

- Minimum PC: Intel® Xeon® E-2324 @3.10 GHz
- RAM: 16 GB
- NIC: GbE network interface card
- Hard Disk Type: SATA- 7200 RPM Enterprise Class HDD
- Hard Drive Capacity: 650 GB for the HDD where SYS is installed
- Other: Microsoft® Windows Server 2012 (R2) (64-bit)

For Streaming Server

- Minimum PC: Intel® Core™ i5-12500 @3.00 GHz
- RAM: 8 GB
- NIC: GbE network interface card
- Hard Disk Type: SATA-II 7200 RPM Enterprise Class HDD
- Hard Drive Capacity: 10 GB for storing log files

For HikCentral Professional Control Client

- Minimum PC: Intel® Core™ i3-12100 @ 3.30 GHz
- RAM: 8 GB
- NIC: GbE network interface card
- Graphics Card: Intel® UHD Graphics 730
- Hard Disk Type: SATA Hard Drive or better
- Hard Drive Capacity: 60 GB for OS and HikCentral Professional Control Client
- Other: Microsoft® Windows 10 (64-bit)

3.6 Signal Flow

3.6.1 Login

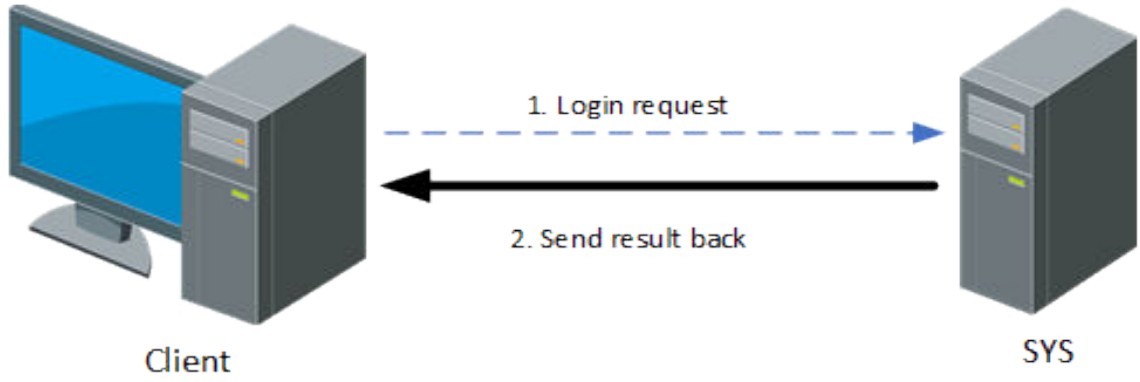

Figure 3-1 Login Flow

During the login, the signaling shall be exchanged between the client (Web Client/Control Client/ Mobile Client) and the SYS.

The signaling interaction process is as follows:

1. Enter the user name and password (domain name) on the client, which shall be sent to the SYS server.
2. The SYS shall receive the information, check whether the user name and password (domain name) are correct, and send the result to the client.

3.6.2 Live View

Live View for Directly Connected Device

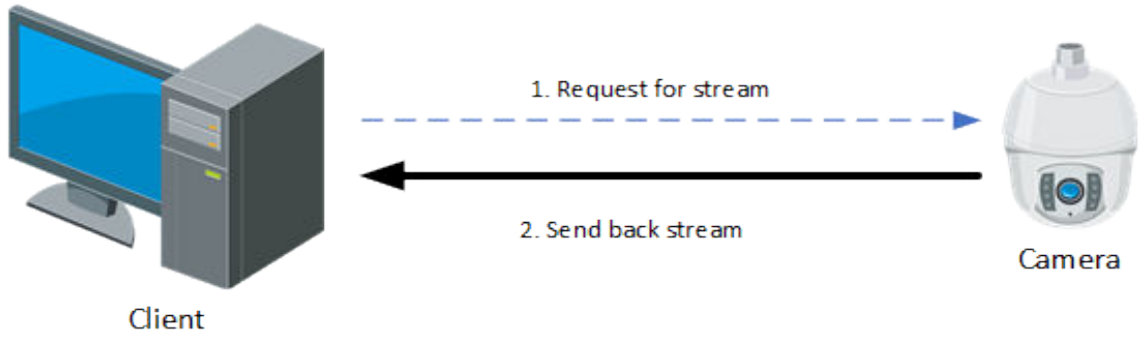

Figure 3-2 Flow of Live View for Directly Connected Device

If the SYS, devices, and the client are deployed in the same LAN network, the client can directly obtain the stream. The signaling process is as follows:

1. The client shall send a request to the device for obtaining the stream.
2. The device shall send back the corresponding stream to the client.

Live View via Streaming Server

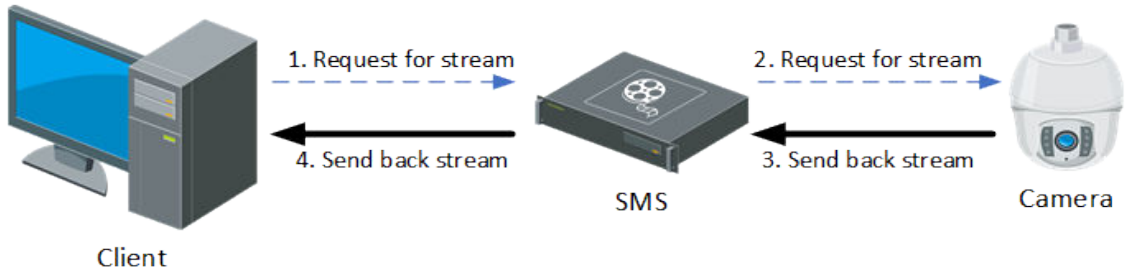

Figure 3-3 Flow of Live View via Streaming Server

In the following situations, the SMS (Streaming Server) shall be deployed:
The client shall obtain streams from third-party devices.
Multiple clients shall request the same stream from the same device. To reduce the bandwidth for obtaining the stream, the stream shall be forwarded via SMS to solve this problem.
The signaling process is as follows:

1. The client shall send a request to the SMS for obtaining the stream.
2. The SMS shall forward the request to the device for obtaining the stream.
3. The device shall send back the corresponding stream to the SMS.
4. The SMS shall forward the obtained stream to the client.

Live View via VSM Server

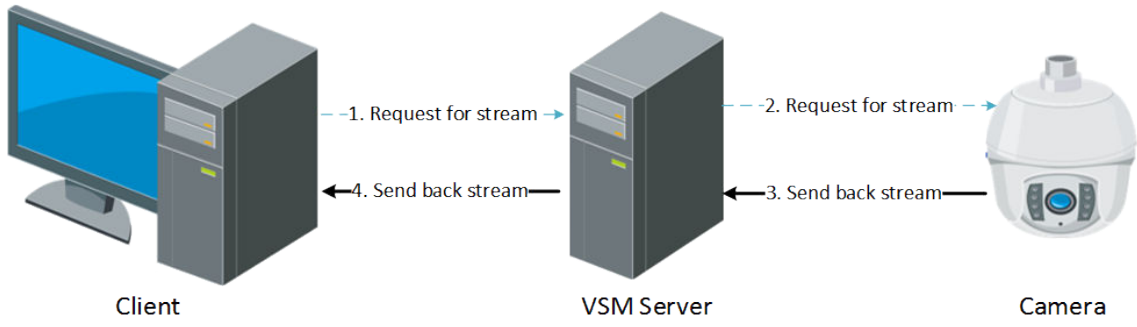

Figure 3-4 Flow of Live View via VSM Server

The signaling process is as follows:

1. The client shall send a request to the VSM Server for obtaining the stream.
2. The VSM Sever shall forward the request to the device for obtaining the stream.

3. The device shall send back the corresponding stream to the VSM Server.
4. The VSM Server shall forward the obtained stream to the client.

PTZ Control

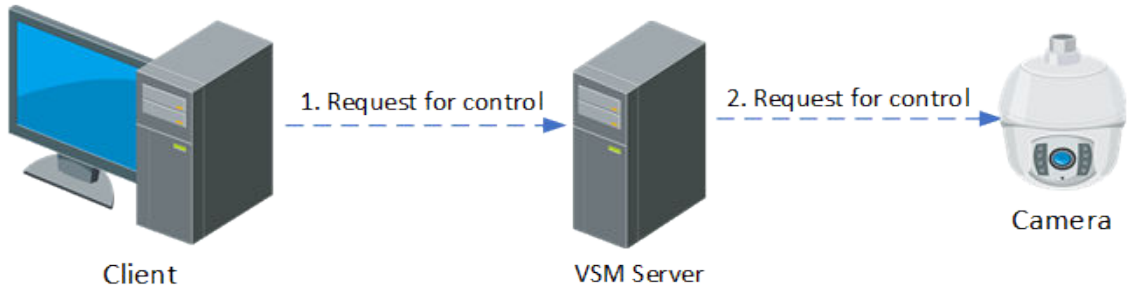

Figure 3-5 Flow of PTZ Control

The platform shall control the PTZ camera via the SYS.
The signaling process is as follows:

1. The client shall send a request to the SYS to control the PTZ camera.
2. The SYS shall forward the request to the corresponding device for PTZ control.

3.6.3 Video Storage and Playback

Device storage and playback shall include: video stream storage, video file retrieval and playback.

Video Storage in NVR/DVR

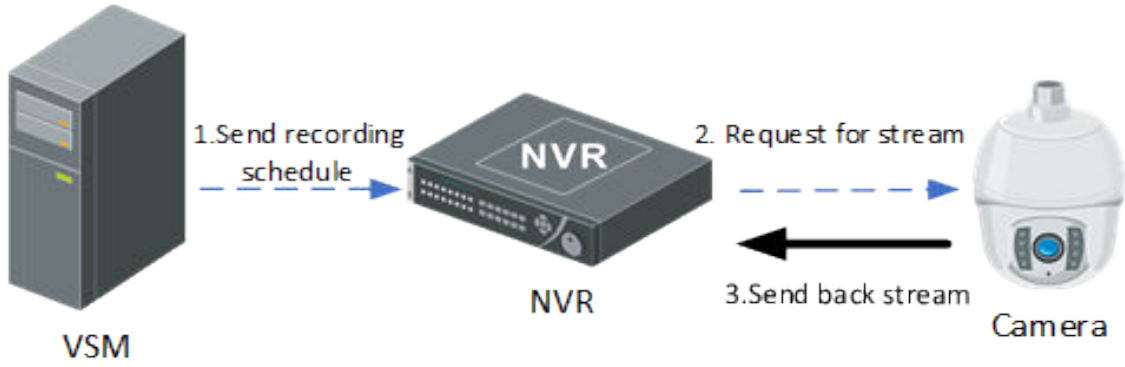

Figure 3-6 Flow of Video Storage in NVR/DVR

As shown in the figure above, the signaling process is as follows:

1. The SYS shall send the recording schedule (event-based recording schedule and time-based recording schedule) to the NVR.
2. When the recording schedule condition is met (within the time segment or an event is triggered), the NVR shall send a request to the camera for obtaining the stream.
3. The camera shall send back the corresponding stream to the NVR.

Note

When manual recording is performed on the Control Client, the preceding steps shall be triggered manually, but not triggered by recording schedule.

Video Storage in Recording Server

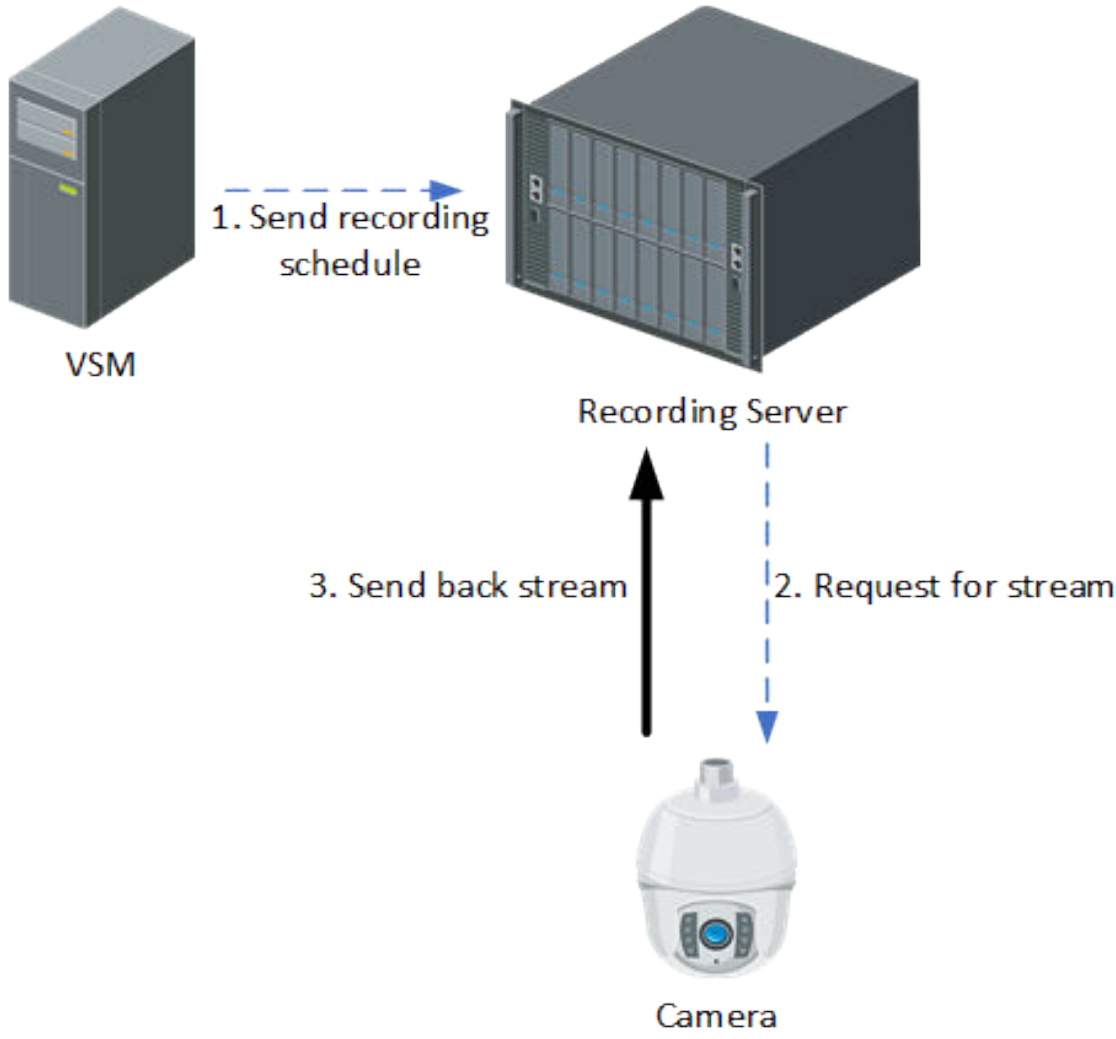

Figure 3-7 Flow of Video Storage in Recording Server

Recording Servers shall include: Hybrid SAN, cloud storage, and pStor. If the video is stored on the recording server, the signaling process is as follows:

1. The SYS shall send the recording schedule (time-based recording schedule and event-based recording schedule) to the Recording Server.
2. The Recording Server shall send a request to the camera for obtaining the stream according to the recording schedule.
3. The camera shall send back the corresponding stream to the recording server according to the request.

Note

When manual recording is performed on the Control Client, the preceding steps shall be triggered manually, but not triggered by recording schedule.

Playback of Video in NVR/DVR

There are two modes for playing back video in NVR/DVR: The client obtains the stream directly from the NVR/DVR, and the client obtains the stream from the NVR/DVR via SMS. The signaling processes are as follows:

1. Playback of Video in Directly Connected NVR/DVR

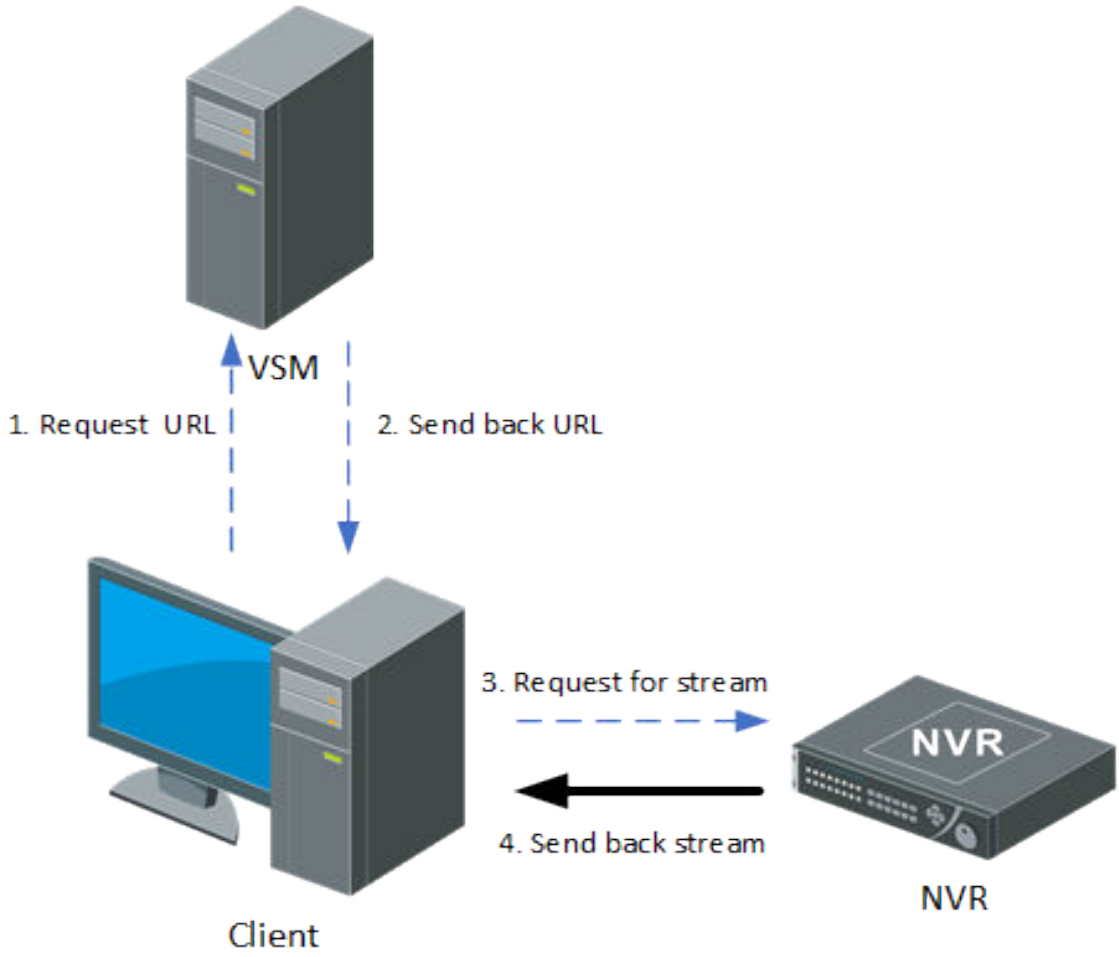

Figure 3-8 Flow of Playing Back Video Stored in Directly Connected NVR/DVR

a. The client shall send a request to the SYS server for obtaining the stream URL.
b. The SYS shall send back the stream URL to the client.
c. The client shall send a request to the NVR for obtaining the stream.
d. The NVR shall send back the corresponding stream to the client according to the request.

2. Playback of Video in NVR/DVR via Streaming Server

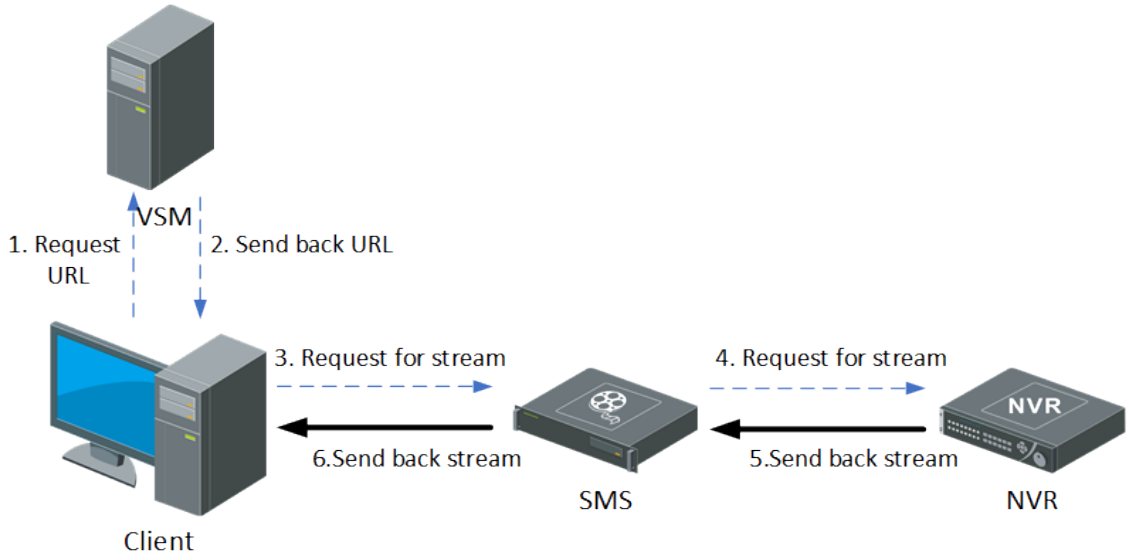

Figure 3-9 Flow of Playing Back Video Stored in NVR/DVR via Streaming Server

a. The client shall send a request to the SYS for obtaining the stream URL.
b. The SYS shall send back the stream URL to the client.
c. The client shall send a request to the SMS (Streaming Server) for obtaining the stream.
d. The SMS shall forward the request to the NVR for obtaining the stream.
e. The NVR shall send back the corresponding stream to the SMS according to the request.
f. The SMS shall forward the corresponding stream to the client.

Playback of Video in Recording Sever

1. Playback of Video in Directly Connected Recording Server

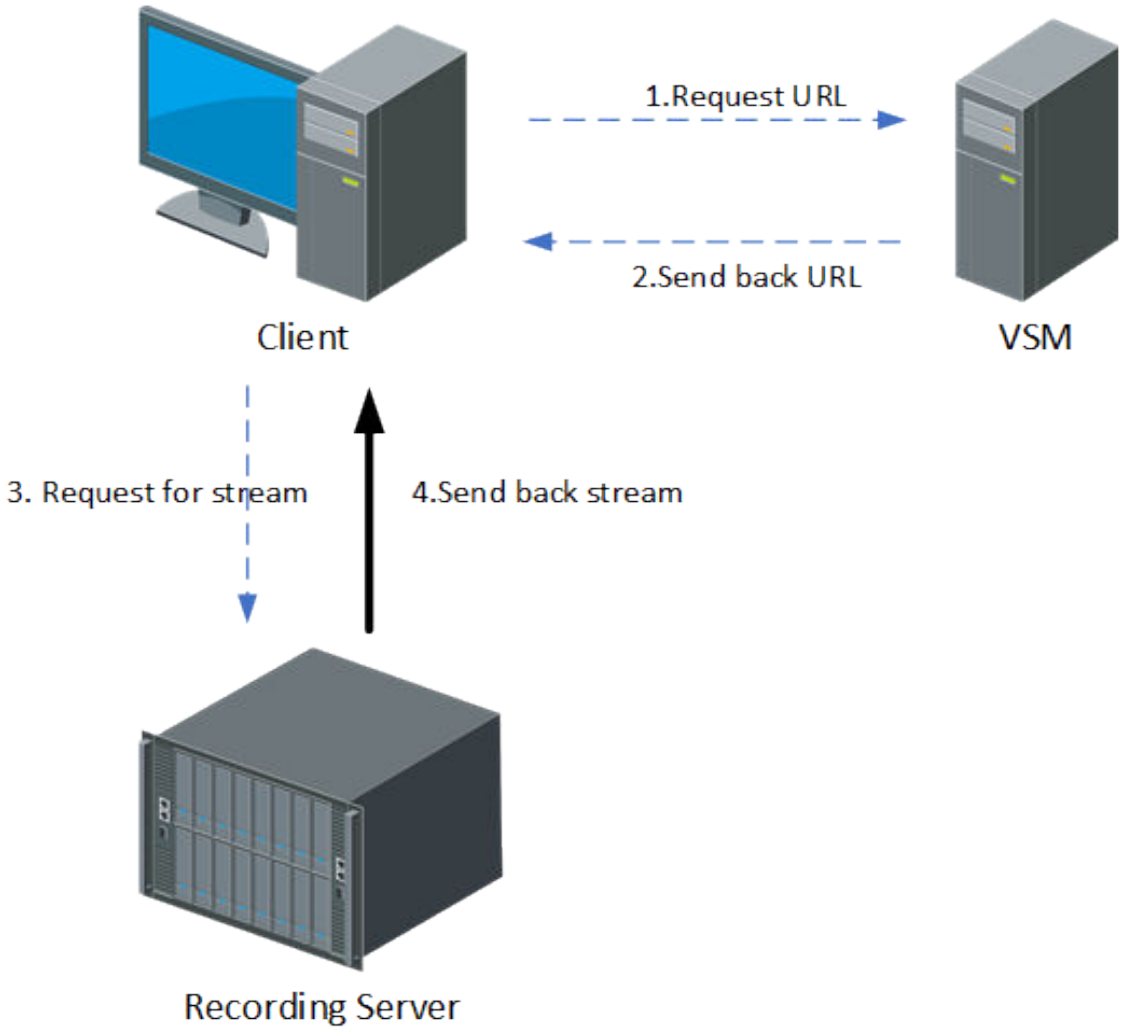

Figure 3-10 Flow of Playing Back Video Stored in Directly Connected Recording Server

a. The client shall send a request to the SYS for obtaining the stream URL.
b. The SYS shall send back the stream URL to the client.
c. The client shall send a request to the recording server for obtaining the stream.
d. The recording server shall send back the corresponding stream to the client according to the request.

2. Playback of Videos in Recording Server via Streaming Server

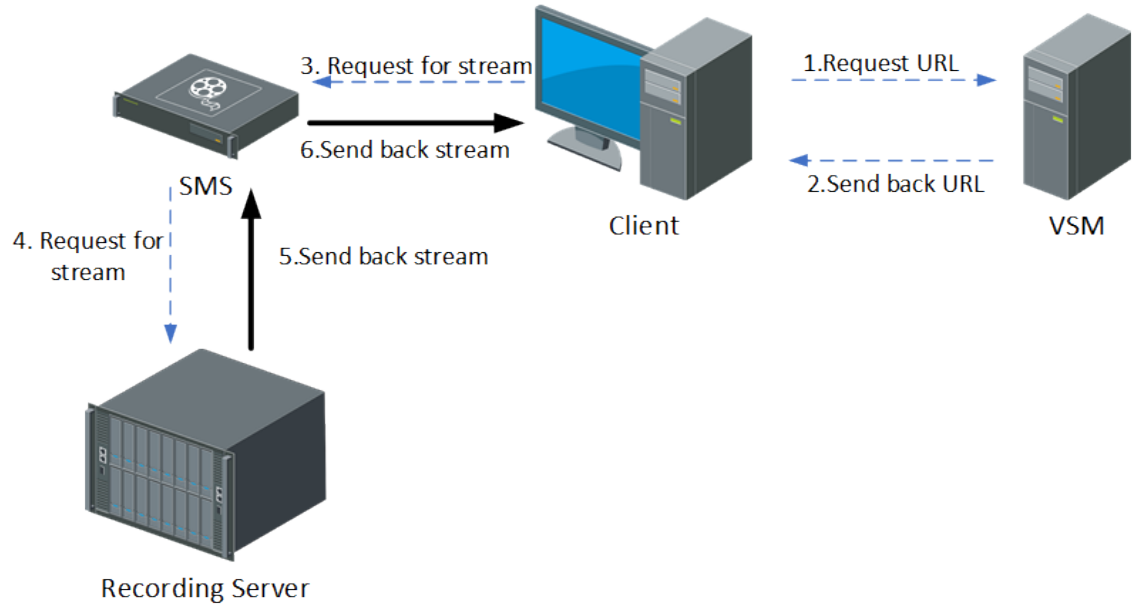

Figure 3-11 Flow of Playing Back Video Stored in Recording Server via Streaming Server

a. The client shall send a request to the SYS for obtaining the stream URL.
b. The SYS shall send back the stream URL to the client.
c. The client shall send a request to SMS for obtaining the stream.
d. The SMS shall forward the request to the Recording Server for obtaining the stream.
e. The Recording Server shall send back the corresponding stream to the SMS according to request.
f. The SMS shall forward the corresponding stream to the client.

3.6.4 Alarm

When an alarm is triggered, there are two modes for the Control Client to obtain the alarm related stream from the device: Obtain the stream via directly connected device and obtain the stream via SMS. The signaling processes are as follows:

Obtain Alarm Related Stream Directly

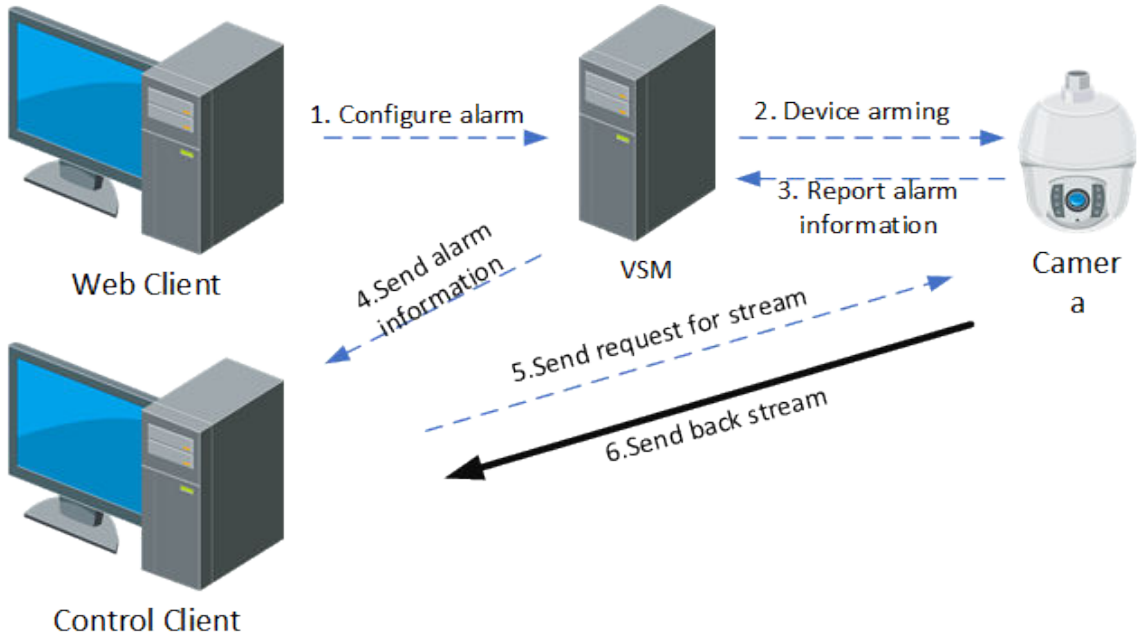

Figure 3-12 Flow of Obtaining Alarm Related Stream Directly

The process of alarm configuration is as follows:

1. Configure alarm via the Web Client, and the alarm configuration shall be sent to the SYS.
2. The device shall be armed by the SYS according the arming schedule.

The process of reporting an alarm is as follows:

1. The device shall analyze the obtained stream. If an alarm is triggered, the device shall report the alarm to the SYS.
2. The SYS shall send the alarm information to the Control Client.
3. If the linkage of live view for the alarm is configured, the Control Client shall send a request to the device for obtaining the stream.
4. The device shall send back the corresponding stream to the Control Client according to the request.

Obtain Alarm Related Stream via Streaming Server

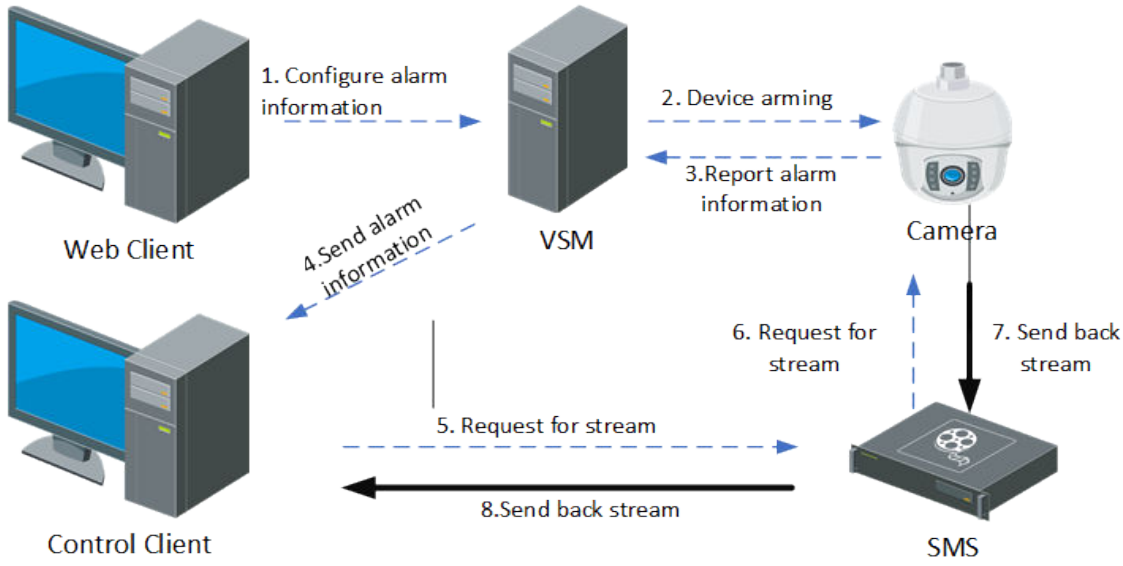

Figure 3-13 Flow of Obtaining Alarm Related Stream via Streaming Server

The process of alarm configuration is as follows:

1. Configure the alarm via the Web Client, and the alarm configuration shall be sent to the SYS.
2. The device shall be armed by the SYS according the arming schedule.

The process of reporting an alarm is as follows:

1. The device shall analyze the obtained stream. If an alarm is triggered, the device shall report an alarm to the SYS.
2. The SYS shall send the alarm information to the Control Client.
3. If the linkage of live view or playback for the alarm is configured, the Control Client shall send a request to the SMS for obtaining the stream.
4. The SMS shall forward the request to the camera for obtaining the stream.
5. The camera shall send back the corresponding stream to the SMS according to the request.
6. The SMS shall forward the stream to the Control Client.

3.6.5 Smart Wall

Display Video on Smart Wall

1. Display Video of Directly Connected Device on Smart Wall

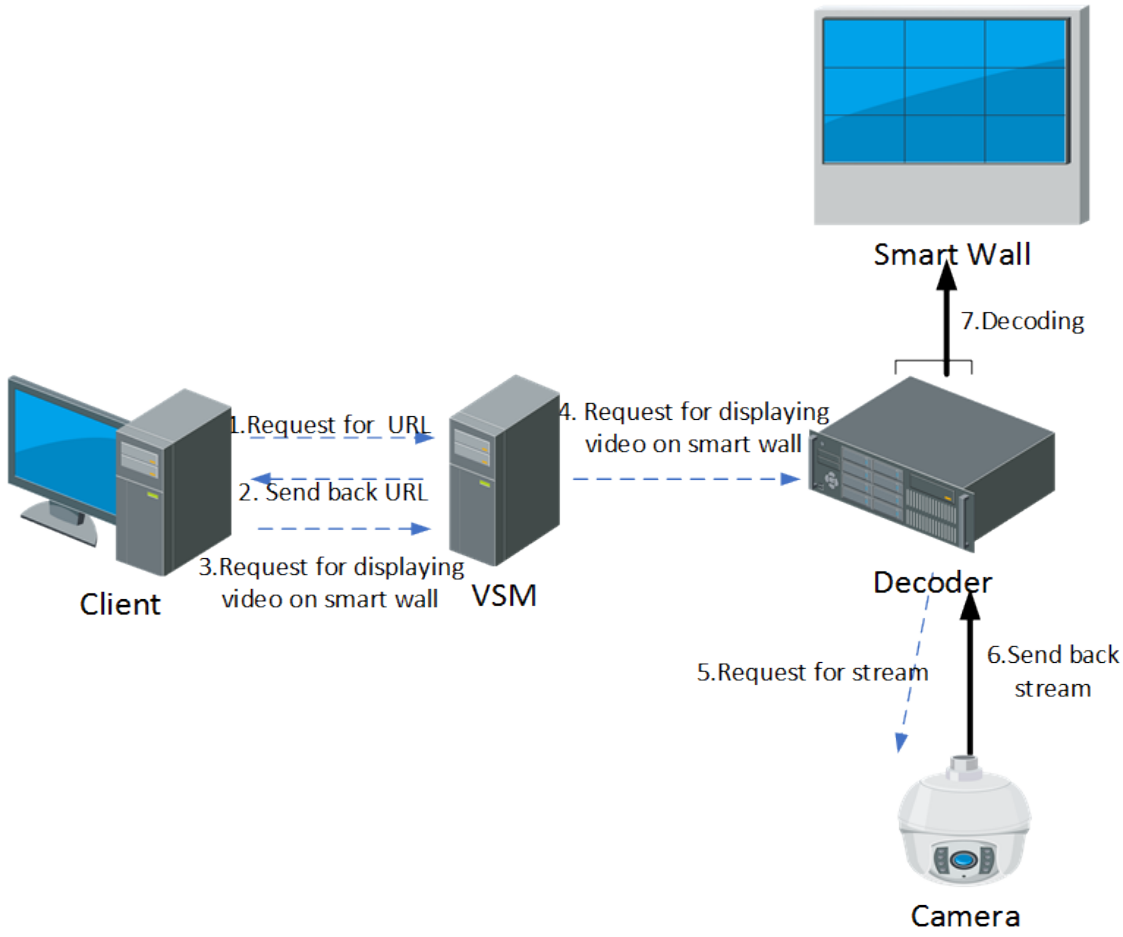

Figure 3-14 Flow of Displaying Video of Directly Connected Device on Smart Wall

When the decoder obtains the stream directly from the device, the signaling process is as follows:

a. The Smart Wall Client shall send a request to the SYS for obtaining the URL information (including the smart wall information and device information).
b. The SYS shall send back the URL information to the Smart Wall Client.
c. The Smart Wall Client shall send a request to the SYS to display the video on the smart wall.
d. The SYS shall forward the request to the decoder to display the video on the smart wall.
e. The decoder shall send a request to the device for obtaining the stream.
f. The device shall send back the corresponding stream to the decoder.
g. The decoder shall decode the obtained stream and display the video on the smart wall.

2. Display Video on Smart Wall via Streaming Server

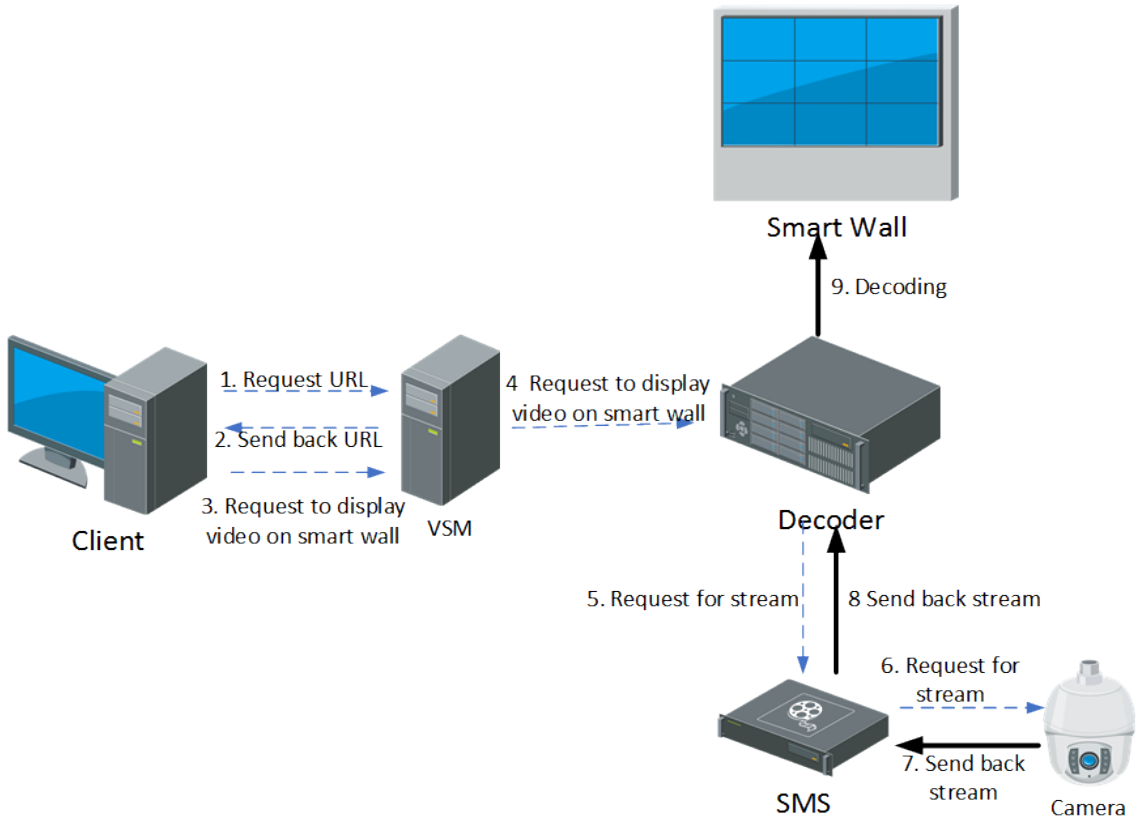

Figure 3-15 Flow of Displaying Video on Smart Wall via Streaming Server

If the decoder obtains the stream via SMS, the signaling process is as follows:

a. The Smart Wall Client shall send a request to the SYS for obtaining the URL information (including the smart wall information and device information).
b. The SYS shall send back the URL information to the Smart Wall Client.
c. The Smart Wall Client shall send a request to the SYS to display the video on the smart wall.
d. The SYS shall forward the request to the decoder to display the video on the smart wall.
e. The decoder shall send a request to the SMS (Streaming Server) for obtaining the stream.
f. The SMS shall forward the request to the device for obtaining the stream.
g. The device shall send back the corresponding stream to the SMS.
h. The SMS shall forward the stream to the decoder.
i. The decoder shall decode the obtained stream and display the video on the smart wall.

Display Alarm Video on Smart Wall

1. Display Alarm Video of Directly Connected Device on Smart Wall

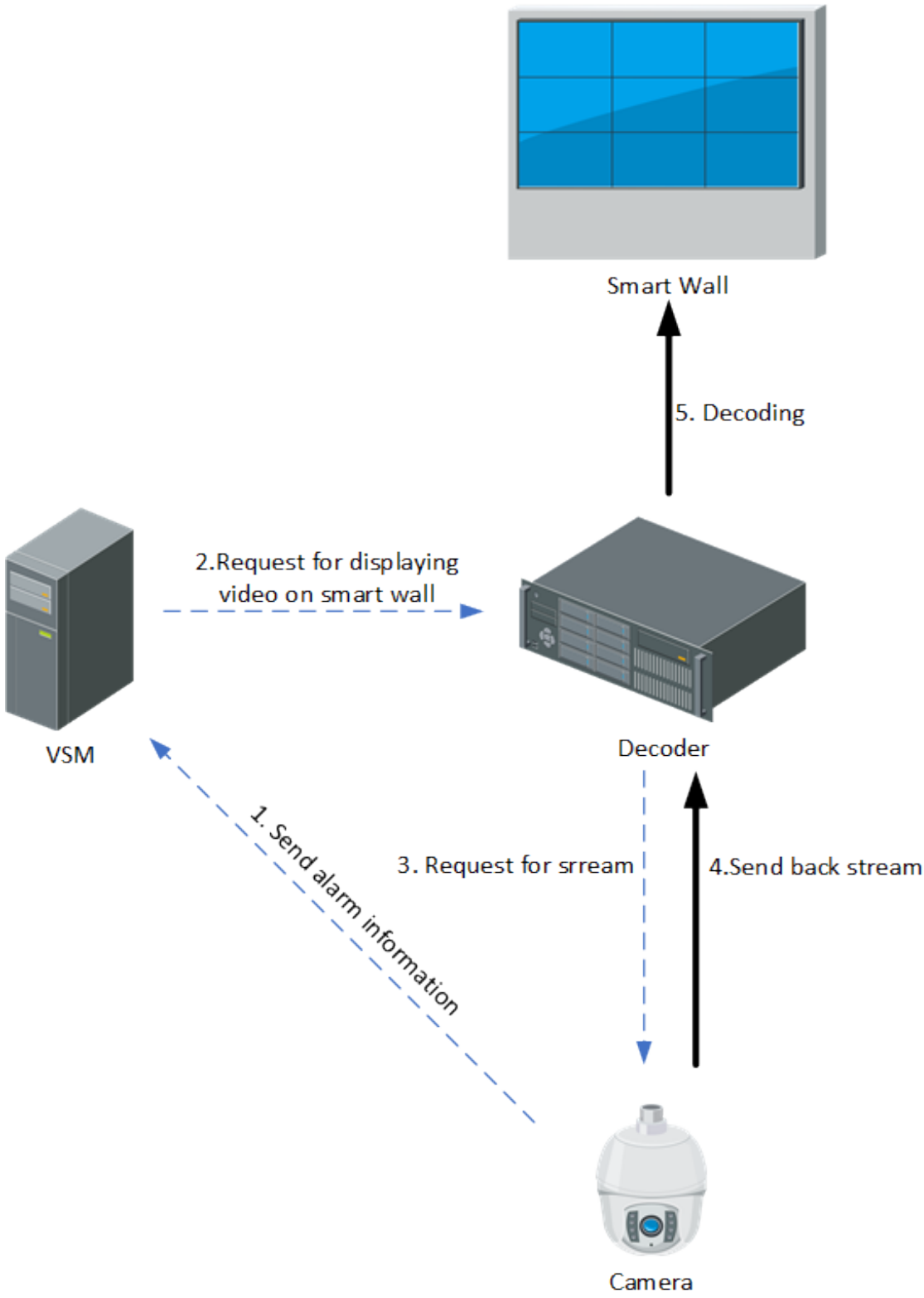

Figure 3-16 Flow of Displaying Alarm Video of Directly Connected Device on Smart Wall

The process of displaying alarm video of directly connected device on smart wall is as follows:

a. The camera shall analyze the obtained streams. If an alarm is triggered, the camera shall send the alarm to the SYS.
b. According to the alarm, the SYS shall estimate whether the video of the camera need to be displayed on the smart wall. If yes, the SYS shall send a request to the decoder to display video on smart wall.
c. The decoder shall send a request to the corresponding camera for obtaining the alarm video stream.
d. The camera shall send back the stream according to the corresponding request.
e. The decoder shall decode the obtained stream and displays the video on the smart wall.

2. Display Alarm Video on Smart Wall via Streaming Server

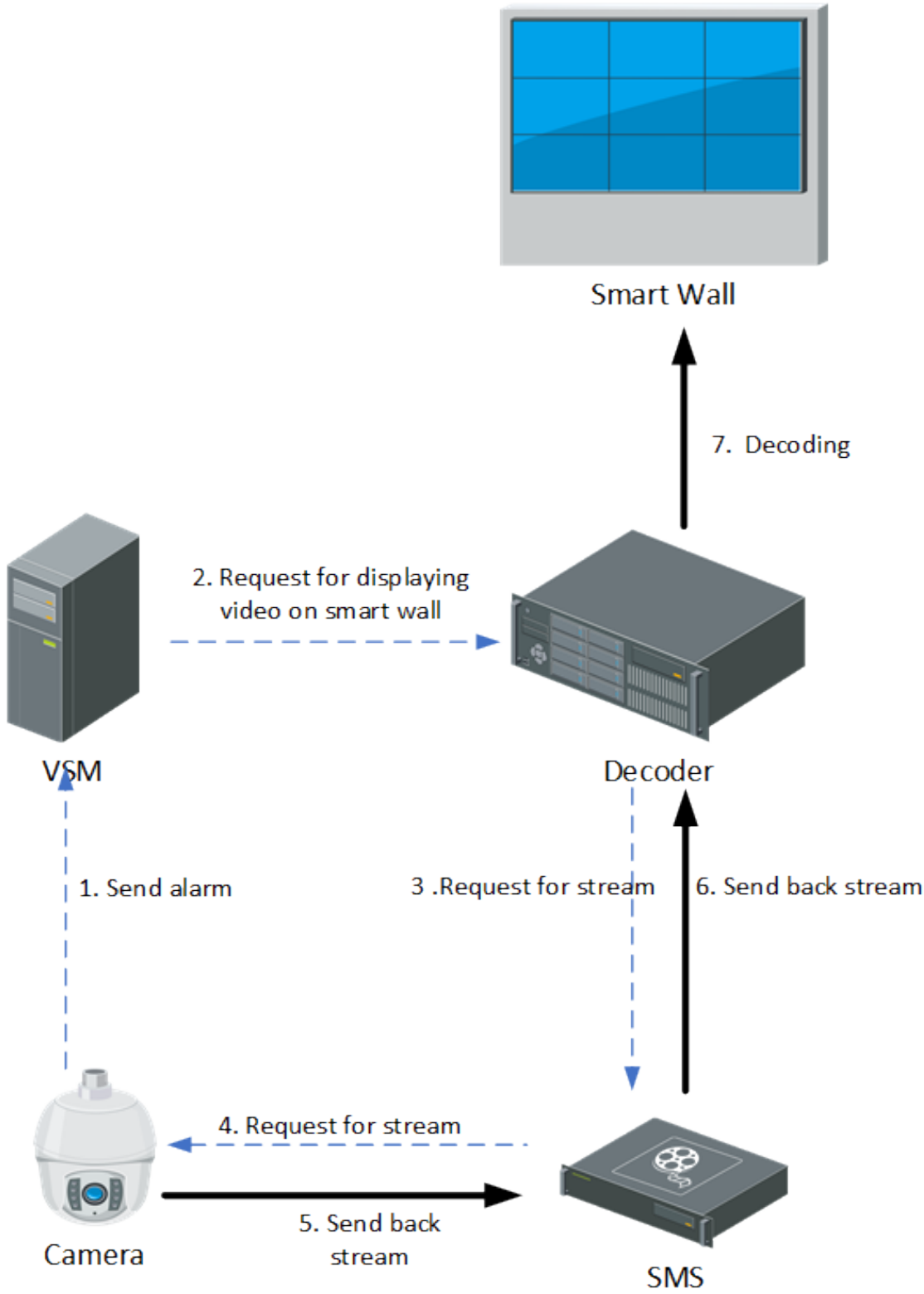

Figure 3-17 Flow of Displaying Alarm Video on Smart Wall via Streaming Server

The process of displaying alarm video of device on smart wall via SMS is as follows:

a. The camera shall analyze the obtained streams. If an alarm is triggered, the camera shall send the alarm to the SYS.
b. According to the alarm, the SYS shall estimate whether the video of the camera need to be displayed on the smart wall. If yes, the SYS shall send a request to the decoder to display video on smart wall.
c. The decoder shall send a request to the SMS (Streaming Server) for obtaining the stream.
d. The SMS shall forward the request to the corresponding camera for obtaining the stream.
e. The camera shall send back the stream to the SMS according to the corresponding request.
f. The SMS shall forward the obtained streams to the decoder.
g. The decoder shall decode the obtained stream and display the video on the smart wall.

Display Video Controlled by Keyboard on Smart Wall

1. Display Video of Directly Connected Device Controlled by Keyboard on Smart Wall

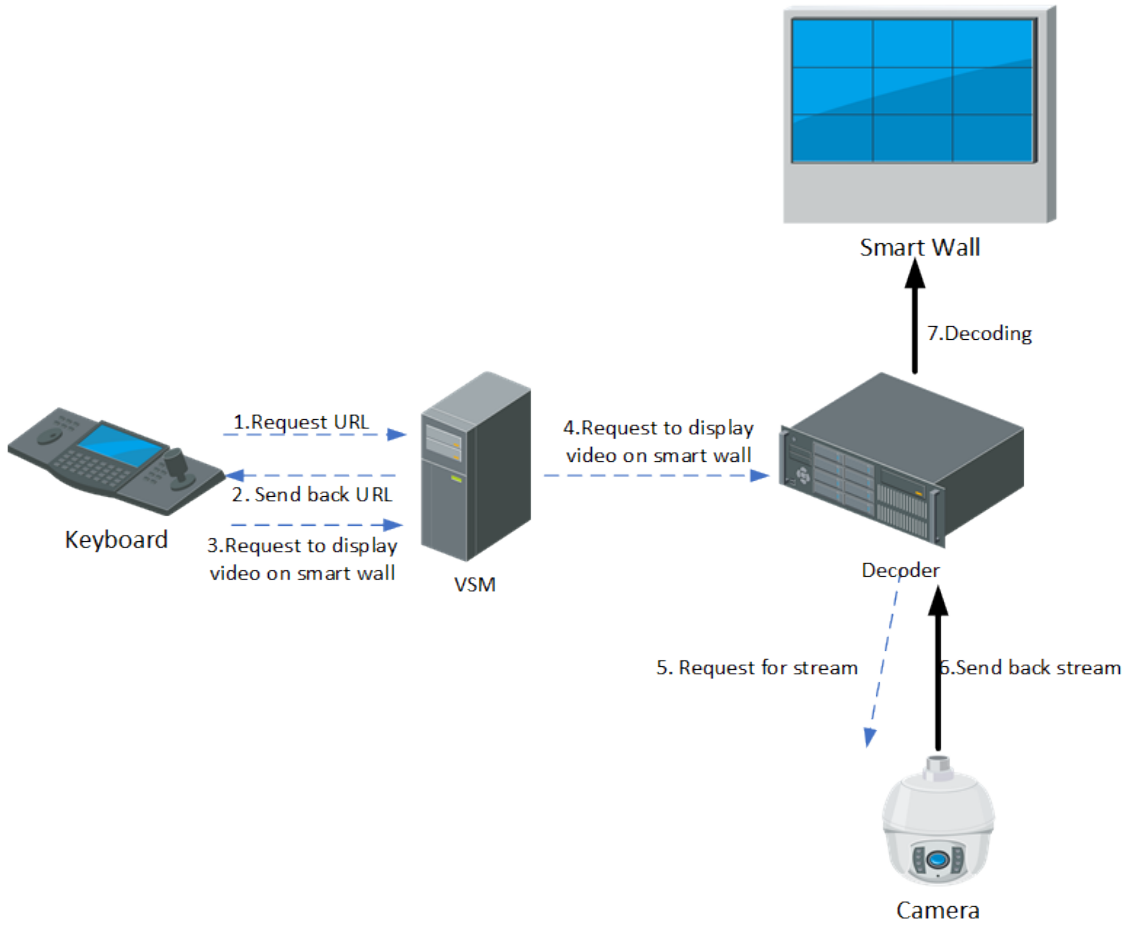

Figure 3-18 Flow of Displaying Video of Directly Connected Device Controlled by Keyboard on Smart Wall

If the decoder obtains the stream directly from the device, the signaling process is as follows:

a. The keyboard shall send a request to the SYS for obtaining the URL information (including the smart wall information and device information).
b. The SYS shall send back the URL information to the keyboard.
c. The keyboard shall send a request to the SYS to display the video on the smart wall.
d. The SYS shall forward the request to the decoder to display the video on the smart wall.
e. The decoder shall send a request to the device for obtaining the stream.
f. The device shall send back the corresponding stream to the decoder.
g. The decoder shall decode the obtained stream and display the video on the smart wall.

2. Display Video Controlled by Keyboard on Smart Wall via Streaming Server

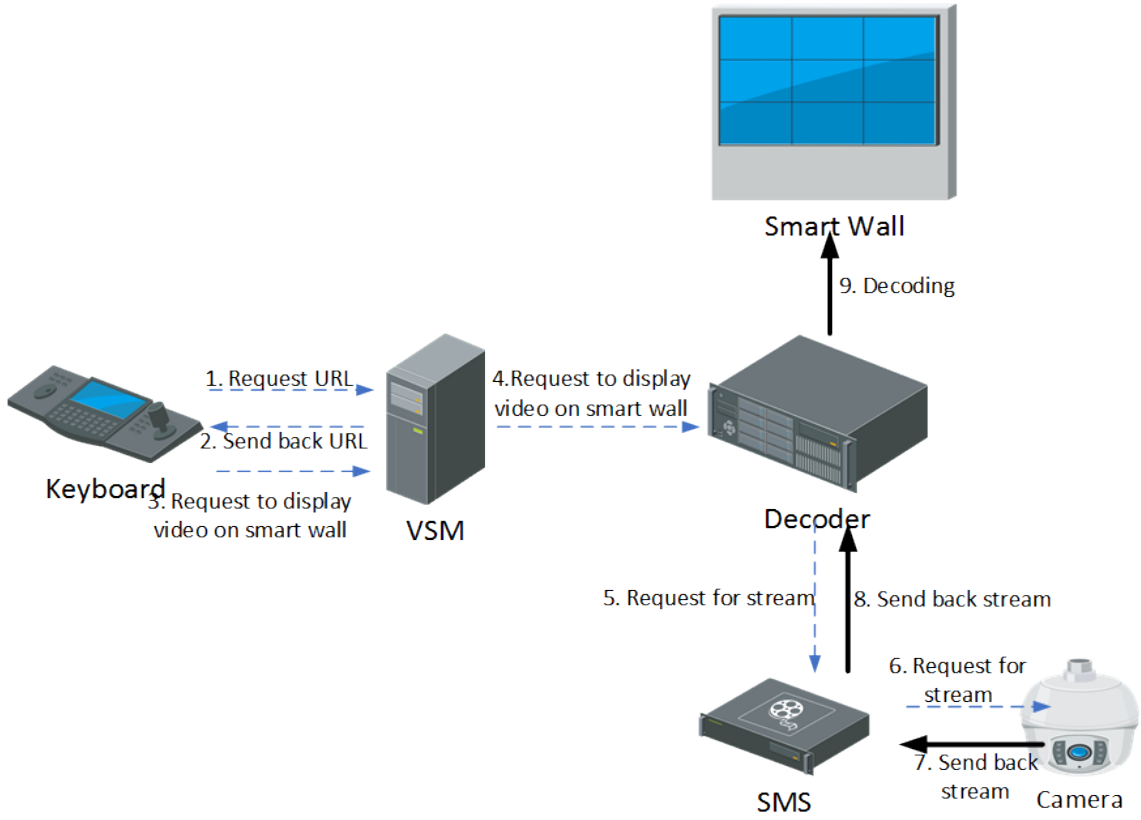

Figure 3-19 Flow of Displaying Video Controlled by Keyboard on Smart Wall via Streaming Server

If the decoder obtains the stream via SMS, the signaling process is as follows:

a. The keyboard shall send a request to the SYS for obtaining the URL information (including the smart wall information and device information).
b. The SYS shall send back the URL information to the Smart Wall Client.
c. The keyboard shall send a request to the SYS to display the video on the smart wall.
d. The SYS shall forward the request to the decoder to display the video on the smart wall.
e. The decoder shall send a request to the SMS (Streaming Server) for obtaining the stream.
f. The SMS shall forward the request to the device for obtaining the stream.
g. The device shall send back the corresponding stream to the SMS.

h. The SMS shall forward the stream to the decoder.
i. The decoder shall decode the obtained stream and display the video on the smart wall.

Display Video on Smart Wall (Graphic Card)

1. Display Video of Directly Connected Device on Smart Wall (Graphic Card)

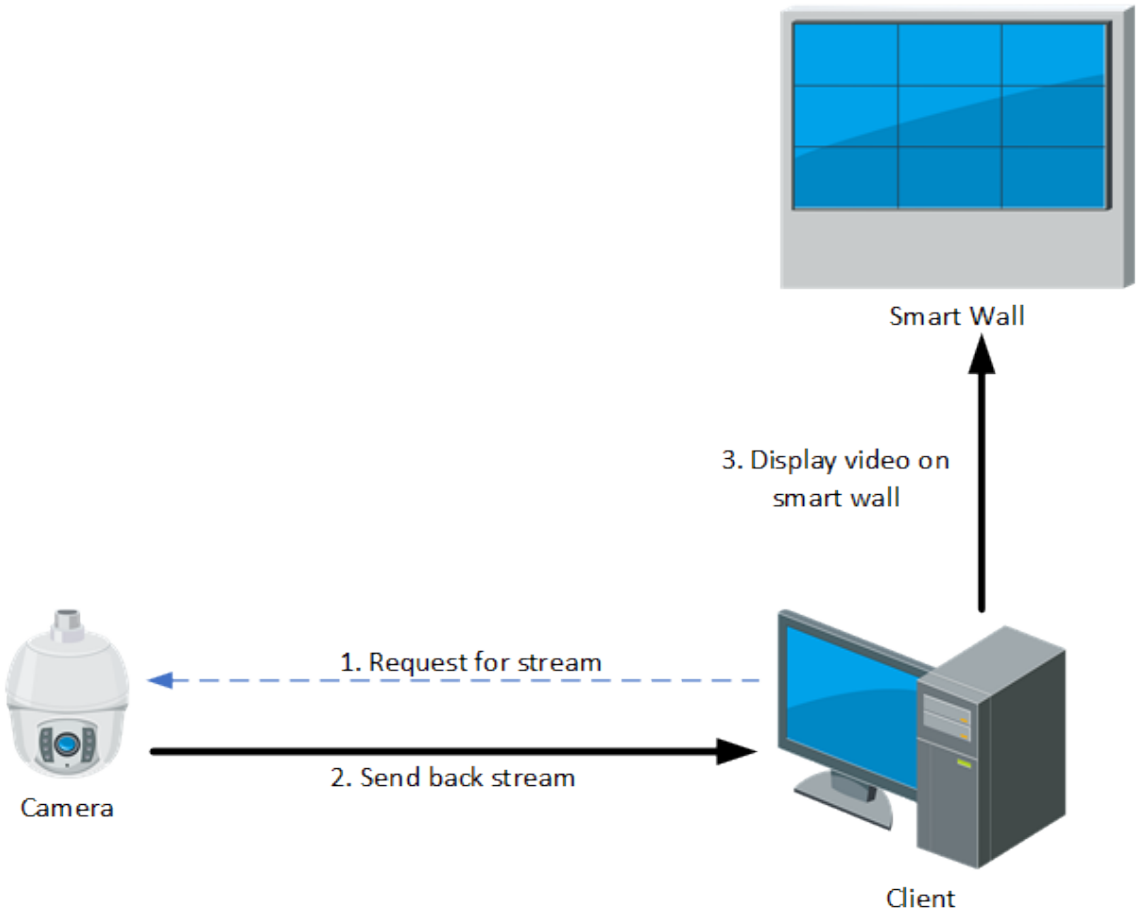

Figure 3-20 Flow of Displaying Video of Directly Connected Device on Smart Wall (Graphic Card)

a. The client shall send a request to the camera for obtaining the stream.
b. The camera shall send back the corresponding stream to the client.
c. The client shall send the stream to display on the Smart Wall (Graphic Card).

2. Display Video on Smart Wall (Graphic Card) via Streaming Server

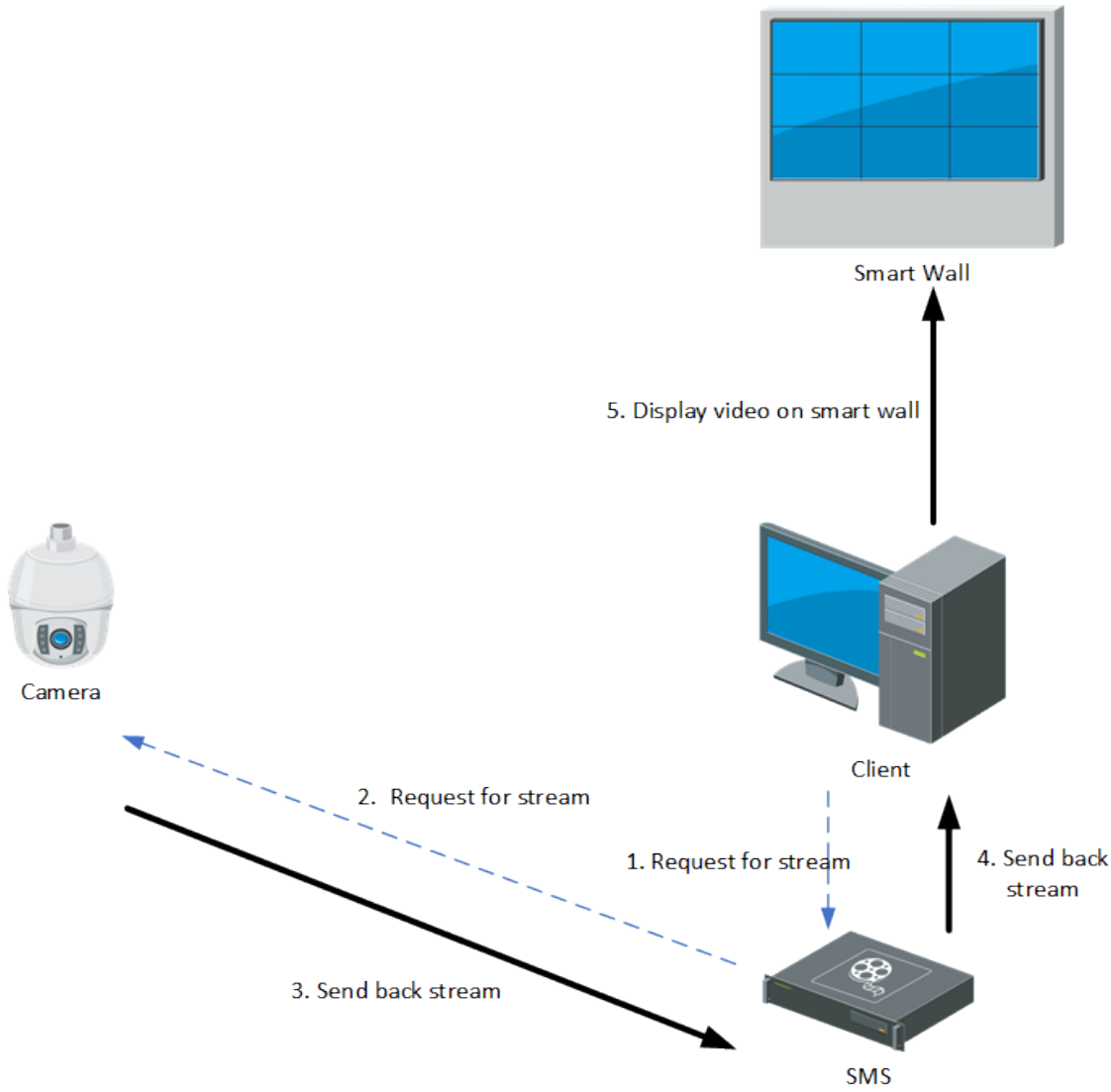

Figure 3-21 Flow of Displaying Video on Smart Wall (Graphic Card) via Streaming Server

a. The client shall send a request to the SMS (Streaming Server) for obtaining the stream.
b. The SMS shall forward the request to the camera for obtaining the stream.
c. The camera shall send back the corresponding stream to the SMS.
d. The SMS shall forward the obtained stream to the client.
e. The Client shall send the stream to display on the Smart Wall (Graphic Card).

3.6.6 Access Control

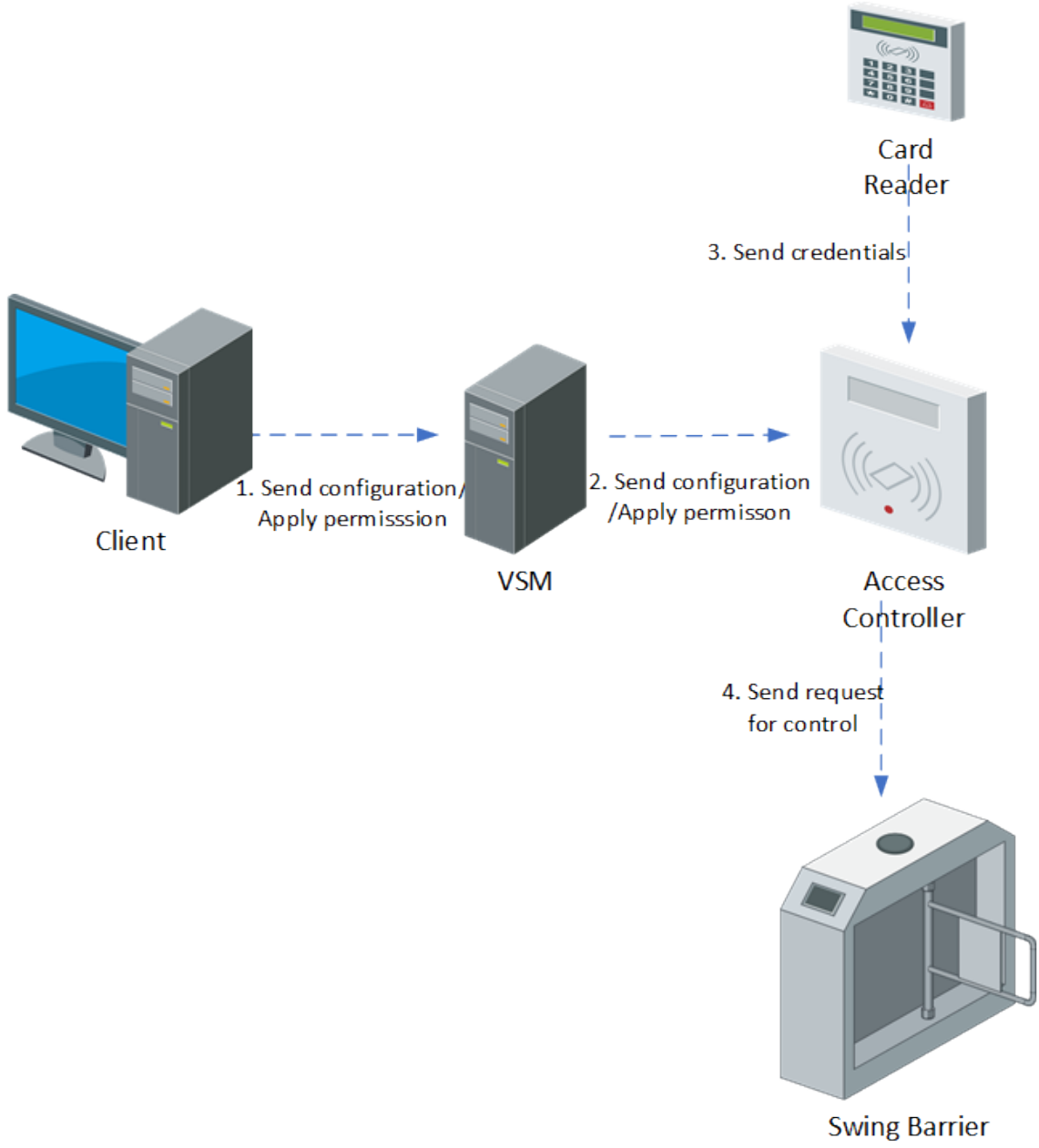

Figure 3-22 Access Control Flow

The signaling process of access control and management is as follows:

1. The Web Client shall send an access control configuration command (including personnel permission, device configuration and event configuration) to the SYS.
2. The SY shall send the configuration command to the device.

3. The card reader shall obtain the corresponding instruction, and send the credential information to the access controller.
4. The access controller shall send the control request to the swing barrier according to the obtained instruction to control the switch status of the swing barrier.

3.6.7 ANPR

View Pictures Captured by ANPR Camera

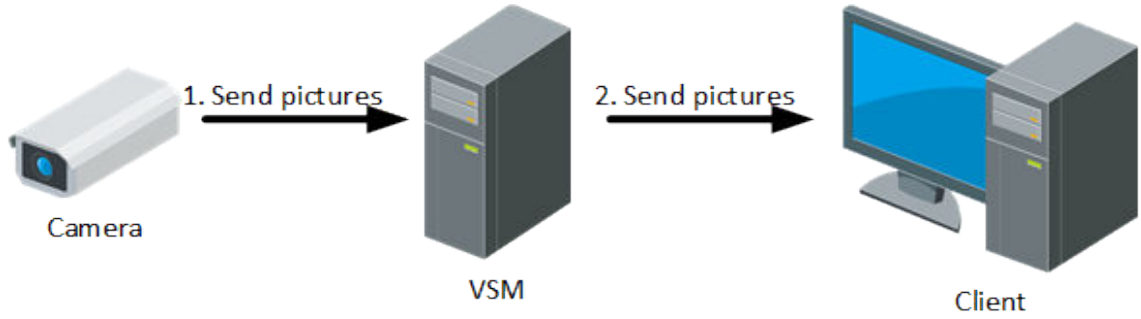

Figure 3-23 Flow of Viewing Pictures Captured by ANPR Camera

According to the settings of the platform, the pictures can be stored in the SYS locally or in the picture storage server.

If the picture is stored in the SYS, the signaling process is as follows:

1. The ANPR camera shall capture the picture, and uploads the picture to the SYS.
2. The SYS shall send the obtained picture to the Control Client for display.

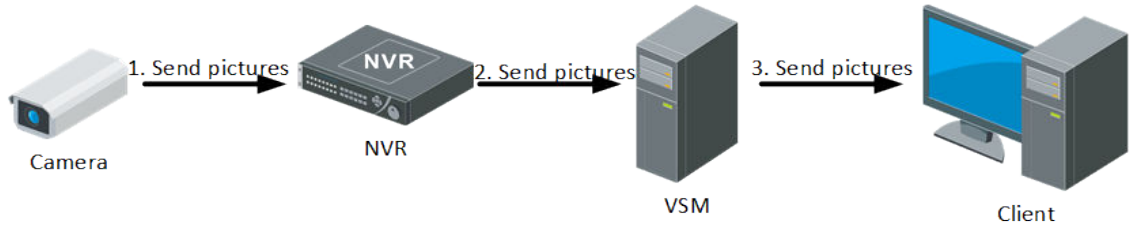

Figure 3-24 Flow of Viewing Pictures Stored in Recording Server and Captured by ANPR Camera

If the picture is stored in the picture storage server (e.g. NVR), the signaling process is as follows:

1. The ANPR camera shall capture the picture, and uploads the picture to the NVR.
2. The NVR shall send the obtained picture to the SYS.
3. The SYS shall send the obtained picture to the Control Client for display.

Retrieval Pictures Stored in SYS

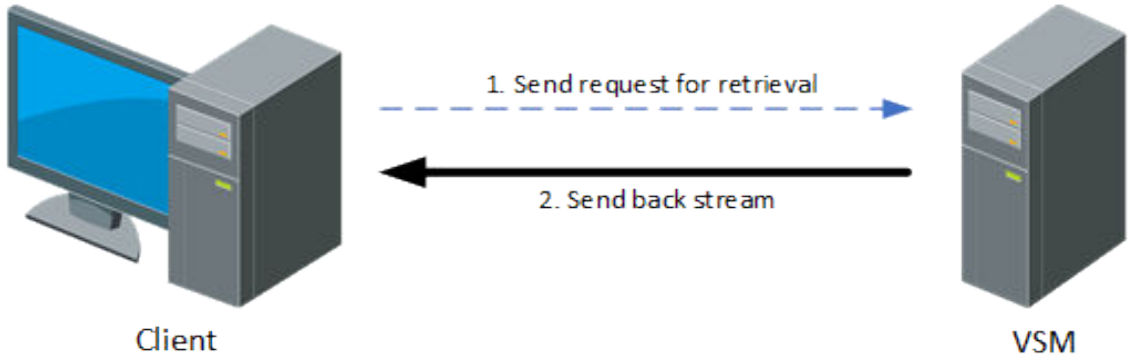

Figure 3-25 Flow of Searching Pictures Stored in SYS

If the ANPR pictures is stored in the SYS, the signaling process of ANPR picture retrieval and display is as follows:

1. The Control Client shall send a picture retrieval instruction to the SYS.
2. The SYS shall search the required picture(s) and send back the result to the Control Client.

Retrieval Pictures Stored in NVR

1. Client and NVR are in the Same LAN

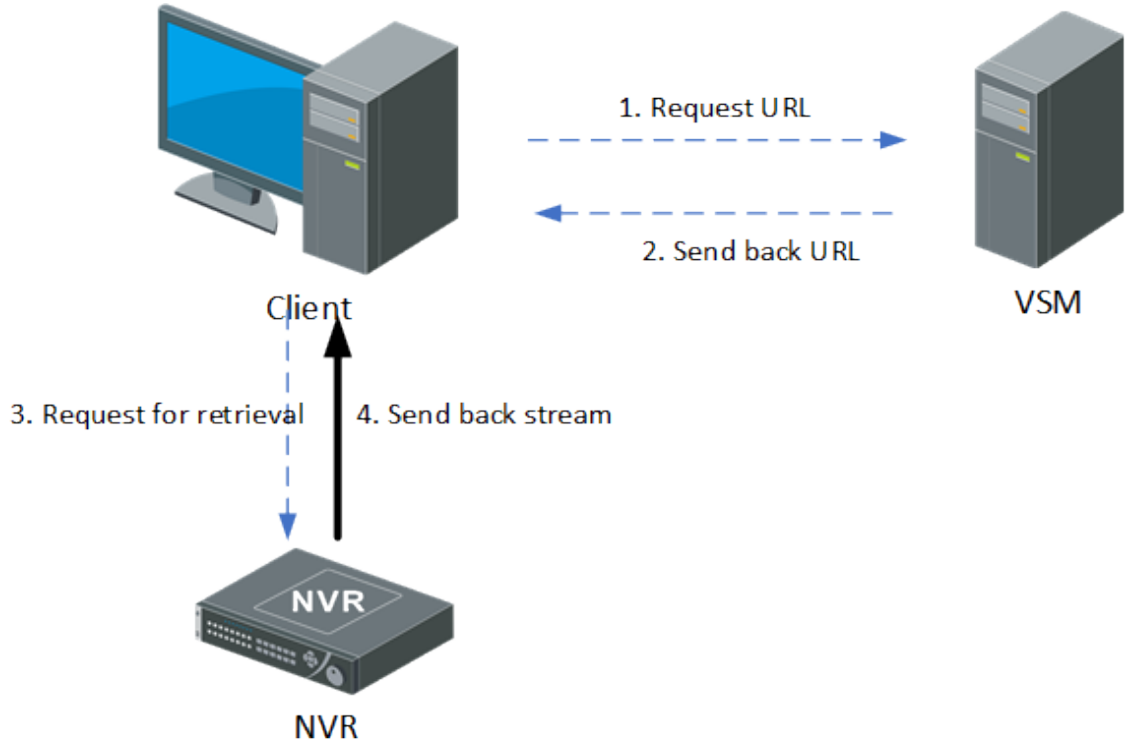

Figure 3-26 Flow of Searching Pictures Stored in NVR When Client and NVR are in Same LAN

If the video is stored in the NVR that is in the same network with the Control Client, the process of obtaining the pictures captured by ANPR cameras is as follows:

a. The Control Client shall send a request to the SYS for obtaining the NVR URL information.
b. The SYS shall send the corresponding URL information to the Control Client.
c. According to the obtained URL information, the Control Client shall send an instruction to the NVR for obtaining the pictures captured by ANPR camera.
d. The NVR shall send back the corresponding pictures to the Control Client according to the obtained instruction.

2. Client and NVR are in Different LANs

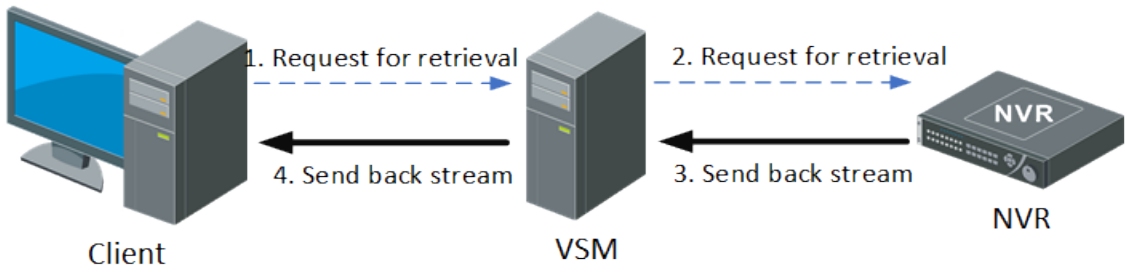

Figure 3-27 Flow of Searching Pictures Stored in NVR When Client and NVR are in Different LANs

If the video is stored in the NVR that is not in the same network with the Control Client, the process of obtaining the pictures captured by ANPR cameras is as follows:

a. The Control Client shall send a request to the SYS for picture retrieval.
b. The SYS shall send the retrieval request to the NVR.
c. The NVR shall send back the picture captured by ANPR camera to SYS according to the request.
d. The SYS shall forward the obtained picture to the Control Client according to the actual instruction.

3.6.8 Mobile Client

Live View

The Mobile Client, like other clients, shall belong to the HikCentral Professional client. Therefore, the process of obtaining streams is the same as that of other clients.

1. Live View for Directly Connected Device

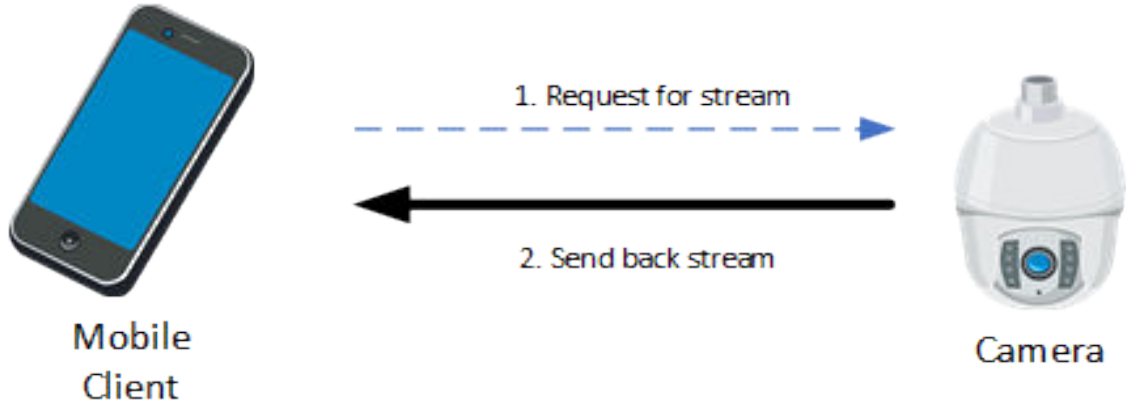

Figure 3-28 Flow of Live View for Directly Connected Device on Mobile Client

If the Mobile Client and device are directly connected, the process of live view on the Mobile Client is as follows:

a. The Mobile Client shall send a request to the device for obtaining the stream.
b. The device shall send back the corresponding stream to the Mobile Client.

2. Live View via Streaming Server

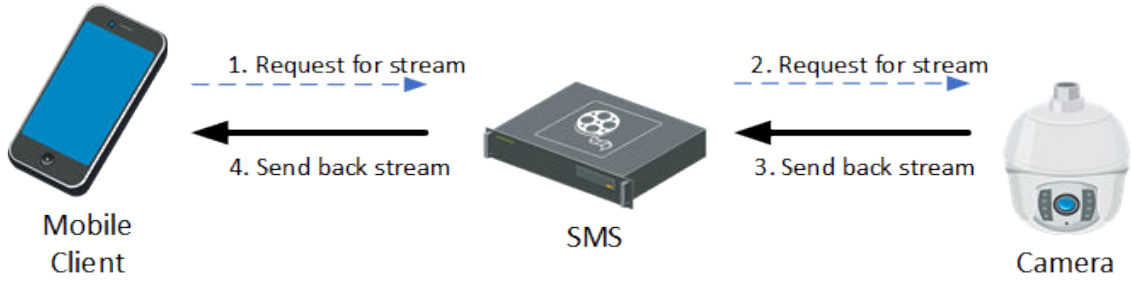

Figure 3-29 Flow of Live View via Streaming Server on Mobile Client

If the Mobile Client obtains the stream from the device via SMS (Streaming Server), the process is as follows:

a. The Mobile Client shall send a request to the SMS for obtaining the stream.
b. The SMS shall forward the request to the device for obtaining the stream.
c. The device shall send back the corresponding stream to the SMS according to the request.
d. The SMS shall send back the stream to the Mobile Client.

Playback

1. Playback of Video in Directly Connected Device

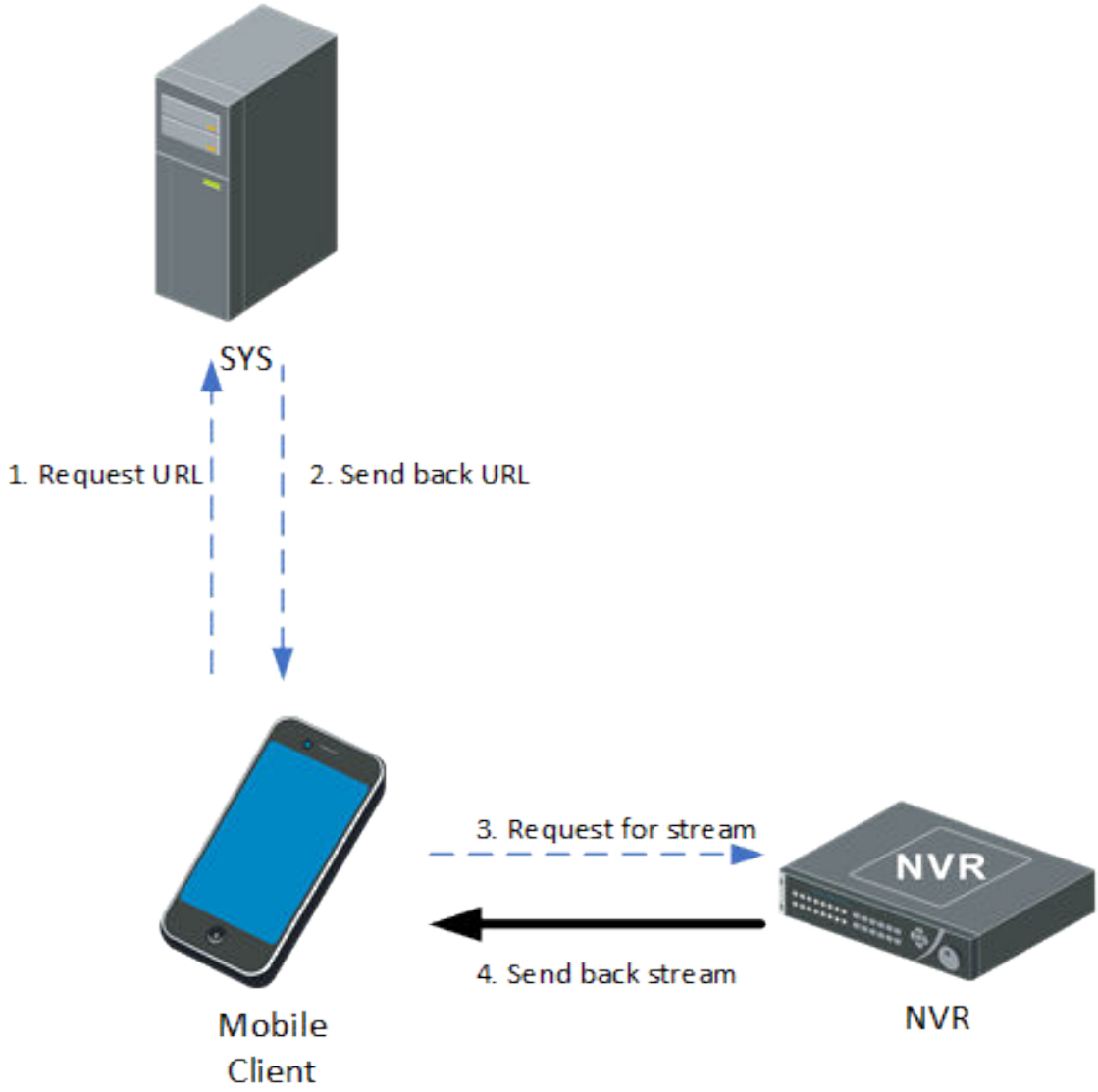

Figure 3-30 Flow of Playback of Video in Directly Connected Device on Mobile Client

If the video file is stored in the directly device, the process is as follows:

a. The Mobile Client shall send a request to the SYS for obtaining the stream URL.
b. The SYS shall send the stream URL information to the Mobile Client.
c. The Mobile Client shall send a request to the directly connected storage device for obtaining the stream.
d. The storage device shall send back the corresponding stream of playback to the Mobile Client.

2. Playback via Streaming Server

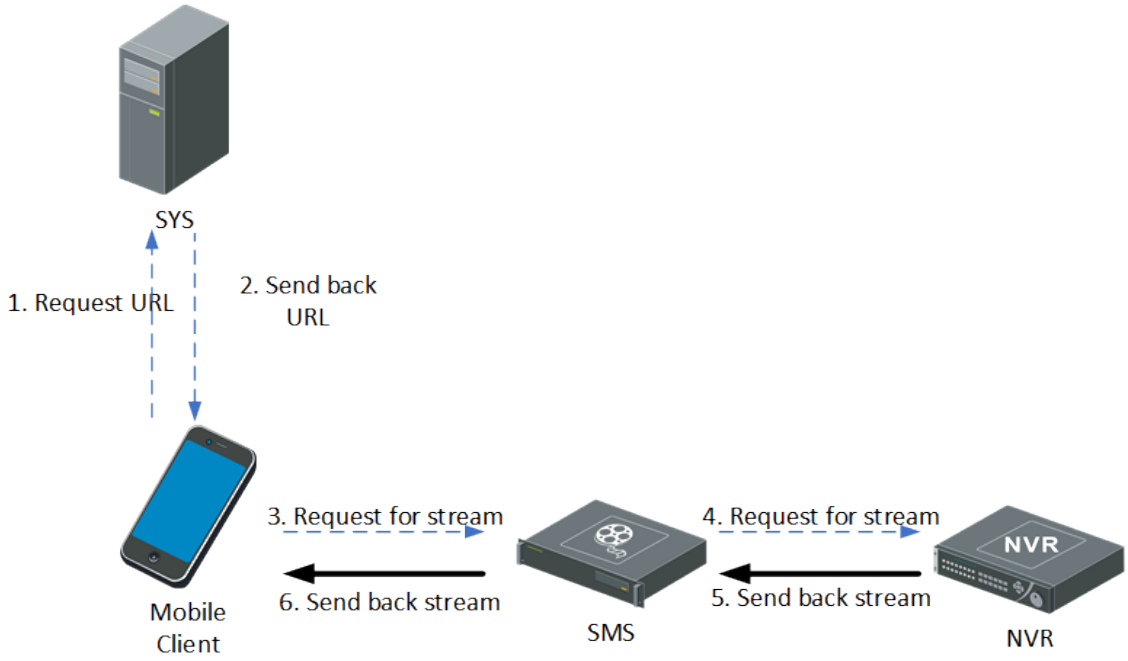

Figure 3-31 Flow of Playback via Streaming Server on Mobile Client

If the Mobile Client obtains stream via SMS, the process is as follows:

a. The Mobile Client shall send a request to the SYS for obtaining the stream URL.
b. The SYS shall send the stream URL information to the Mobile Client.
c. The Mobile Client shall send a request to the SMS for obtaining the stream.
d. The SMS shall forward the request to the NVR for obtaining the stream.
e. The NVR shall send back the stream of playback to the SMS.
f. The SMS shall forward the obtained stream to the Mobile Client.

Alarm

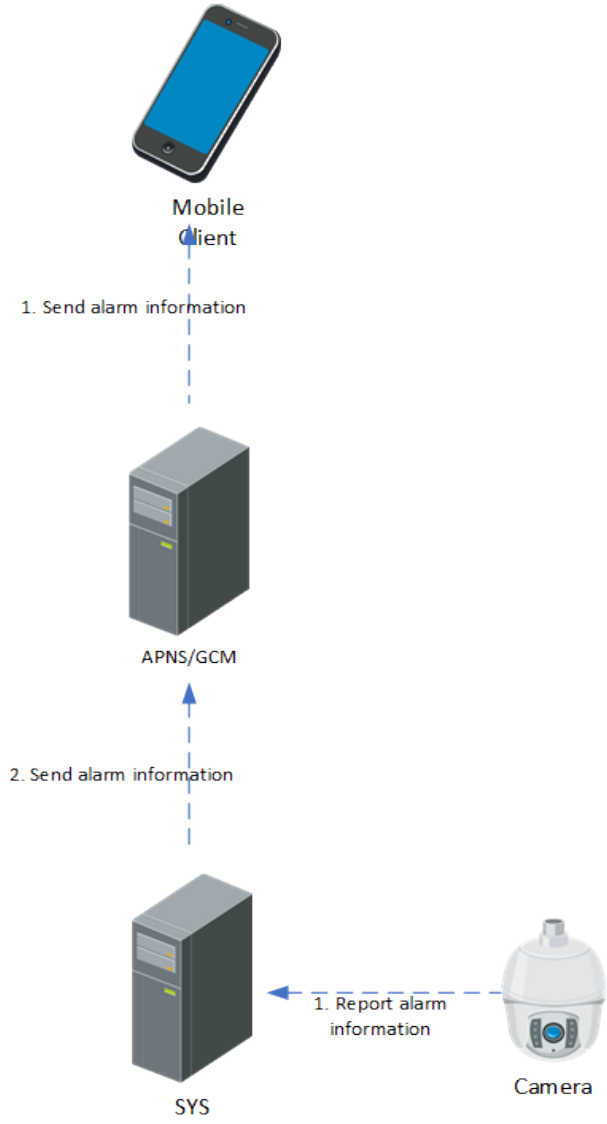

Figure 3-32 Flow of Alarm on Mobile Client

Similar to the other clients, the process of receiving alarm video on Mobile Client is as follows:

1. The device shall report an alarm to the SYS.
2. The SYS shall send the obtained alarm information to the APNS/GCM server.
3. The APNS/GCM server shall send the corresponding alarm information to the Mobile Client.

3.6.9 Status Monitoring

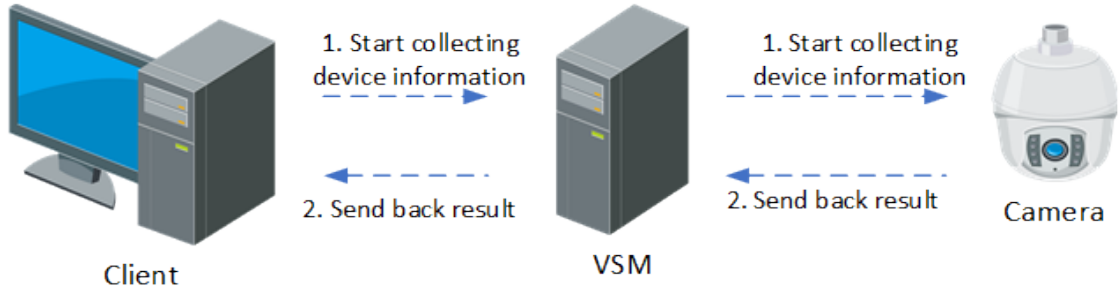

Figure 3-33 Flow of Status Monitoring

The device status inspection shall consist of the following two situations: interaction between the client and the SYS, and between the device and the SYS.

The platform shall initiate inspection information every 3 minutes.

Interaction Between SYS and Device

1. The SYS shall send an inspection command to the device.
2. The device shall send back the status of the device to the SYS.

Interaction Between Client and SYS

1. The Control Client shall send an inspection command to the SYS.
2. The SYS shall send the current status of the device to the Control Client.

3.7 System Security

3.7.1 Security Design Overview

The HikCentral Professional platform shall consist of the server, client, service component, and platform SDK. The interaction between server and client, server and service component, server and platform SDK shall support HTTP and HTTPS.

To ensure the security of data storage, all the sensitive data stored in the server shall be encrypted. All the sensitive information that does not need to be decrypted shall be encrypted by irreversible encryption scheme. All sensitive information that needs to be decrypted shall be encrypted by encryption scheme that can be decrypted.

The HikCentral Professional shall adopt the following encryption algorithms: RSA, AES, SHA, and MD5. All the encryption algorithms shall come from the standard open-source library OpenSSL-1.0.2K. The OpenSSL version shall be updated according to the policies of Hikvision security lab.

3.7.2 System Security Solution

Access Protocol

By default, the HTTP protocol is used for web access. By optional, users can enable the HTTPS protocol.
HTTPS: Users can import the HTTPS certificate to improve the security of data transmission.
HTTP: In HTTP mode, the platform shall provide an independent security solution to prevent replay attacks.

Streaming Server Authentication

To ensure the overall security of the platform, when the clients obtain live view or playback streams from devices via SMS (Streaming Server), the device shall be authenticated by the SMS first.

Login Authentication

The platform authenticates users based on user name and password. The password strength and expiration time can be configured separately on the platform. If the administrator forgets the login password, the platform shall allow users to reset the password by license. To ensure the system security, the input information shall be hidden during password input.
During the transmission, the password shall be encrypted by RSA algorithm in HTTP mode, and the HTTPS internal encryption mechanism shall be used in HTTPS mode. In platform login authentication, the verification code + user lock + IP address lock shall be used to prevent brute force cracking from malicious user, to improve the platform security level.
Man-Machine Authentication: If an incorrect password is entered during the login, users shall manually enter the verification code.
User Lock: This parameter is mandatory enabled. If the password is entered incorrectly for five consecutive times, the user cannot log in to the system within 30 minutes.
IP Address Lock: This parameter is enabled by default. Users can manually configure the number of error times and lock period. If the number of incorrect login attempts for the same IP address exceeds the specified value, the IP address cannot be used to log in to the system within the specified lock period.

Platform Access

After the client successfully logs in to the system, the server shall randomly generate a session for each client. The session can effectively reduce the cracking risks caused by the frequent user name and password interaction verification during the business. Each session shall have a fixed lifetime. When a session carried by a client expires, the user shall log in to the platform again.
In HTTP mode, to ensure that the platform is not attacked by replay attacks, each session shall carry an anti-replay token, which is unique in each session. The token is invalid immediately after each request to prevent repeated token attacks. The token shall be encrypted using AES.

Sensitive Information Processing

For sensitive information such as user name and password that are daily used, HikCentral Professional shall provide security solutions based on the actual service scenarios.
All sensitive information is encrypted during the interaction between the client and server. In HTTP mode, the AES encryption shall be used to generate a random AES key for each login, to ensure that data is not easily stolen. In HTTPS mode, SSL certificate encryption shall be used.
For the sensitive information storage, HikCentral Professional shall provide different storage scheme according to the different business requirements. To prevent the leakage of the encryption key of a platform from affecting other platforms, HikCentral Professional shall adopt the dynamic AES encryption scheme for sensitive information (such as the database access password and device access password) that needs to be locally stored. To prevent system user password leakage caused by system data file leakage, the platform user password shall be encrypted by SHA algorithm and stored in cipher text.

Chapter 4 Function

The platform shall support the functions below.

4.1 Person Management

- ***Person Management***
- ***Credential Management***
- ***Resignation Management***
- ***Position Management***

4.1.1 Person Management

Person Information

- The platform shall support entering person information, including basic information, access level, shift schedule, face comparison group, dock station group, resident information, and custom public information. Basic Information: ID (16 digits and letters); Person group; first name (up to 128 characters); last name (128 characters); skin-surface temperature and status; effective period (10 years from the current time); e-mail; phone No.; super user; extended access; device administrator; PIN code; remark; custom private information.
- The platform shall support changing a person's organization.
- The platform shall support exporting all the added person information as a ZIP file and setting a password for decompressing the ZIP file.
- The platform shall support segmenting person information by tabs on the Add Person page.
- The platform shall support exporting person information with additional items.
- The platform shall support exporting profile pictures of selected persons as a ZIP file and setting an encryption password.
- The platform shall support exporting information and additional information about selected persons.
- The platform shall support importing person information via template with additional items.
- The platform shall support adding a person to the emergency counting group.
- The platform shall support editing credentials (including card, print, face, and iris) in the person list.
- On the Web Client, if the Use This Device as Registration Device function is enabled on the device's configuration page, the information about added persons and credentials, edited credentials on the device shall be automatically synchronized to the platform.

Batch Person Management

- The platform shall support batch adjusting the effective period for persons.
- The platform shall support filtering and batch exporting the expired person information.

- The platform shall support batch reporting cards loss.
- The platform shall support disabling and restoring access levels of persons temporarily.

Customize Person Information

- The platform shall support customizing up to 20 private information items and 4 types per information item including text, value, date, and single selection (limited by the permission of the platform).
- The platform shall support customizing up to 20 public information items and one type (only text) per information item (limited by the permission of the platform).

Login

- The platform shall support administrator enabling employees' self-service login (enabled by default) and setting employees' password (employee ID by default).
- The platform shall support employees' self-service login to the platform.
- The platform shall support locking IP address for a specified period of time after specific number of failed password attempts.
- The platform shall support setting maximum password age.
- The platform shall support requiring employees to change the password upon the first login, sending notes when the password expires, and resetting new password if employees forgot the password.
- The platform shall support login expiring after a period during which no action happens.

Self-Service Uploading Person Information

- The platform shall support entering the Self-Registration page by scanning the self-registration QR code, entering, and submitting person information to the platform.
- The platform shall support enabling the face picture quality verification of the device. After it is enabled, you can choose any device with the face picture quality verification function as a device for verification. It is disabled by default.
- The platform shall support enabling Review Self-Registered Persons function. After it is enabled, all person information submitted in a self-service manner must be reviewed and approved by the Administrator before being imported to the platform.
- The platform shall support importing person information added in a self-service manner into a specific organization (root organization is the default).
- The platform shall support administrators verifying person information uploaded by self-service: approve, reject, and delete.

Import Persons

- The platform shall support importing person information via Excel file and setting parameters about whether to replace duplicate persons and card numbers.
- The platform shall support importing profile pictures in ZIP format and enabling/disabling face picture quality evaluation.
- The platform shall support importing persons from devices.

AD Domain Synchronization

- The platform shall support configuring the mapping relation between the AD domain and the person.
- The platform shall support synchronizing the AD domain with the person or the person group.
- The platform shall support synchronizing the AD domain with the security group.
- The platform shall support synchronizing persons or person groups from the Azure AD domain.
- The platform shall support linking person ID with items in AD domain.

Handling Persons' Permissions Quickly

- The platform shall support clearing permissions.
- The platform shall support detecting permission status.
- The platform shall support disabling access levels and restoring access levels in a batch.

Person Resignation

- The platform shall support resignation management.
- The platform shall support deleting the resigned persons' access levels at the resignation date.
- The platform shall support enabling/disabling attendance calculation during the period between applying for resignation and resignation date.
- The platform shall support searching for access and attendance records of resigned persons.

4.1.2 Credential Management

Card Management

1. The platform shall support up to 20 digits for one card number.
2. The platform shall support adding up to five cards to a person.
3. The platform shall support entering the card number manually.
4. The platform shall support card enrollment stations reading card numbers.
5. When reading the card number via a card enrollment station, the platform shall support selecting card format.
6. The platform shall support encrypting card sectors (one sector for a time) only when the encryption is via the card enrollment station(communicating with the platform via USB).
7. The platform shall support enrollment station (communicating with the platform via network) reading card numbers (supported card types including EM, M1, ID, DESfire, FeliCa, and CPU).
8. The platform shall support enrollment station (communicating with the platform via USB) reading card numbers (supported card types including EM, M1, ID, DESfire, FeliCa, and CPU).
9. The platform shall support any card reader of remote access control devices reading card numbers .
10. Card types: common, duress, and dismiss.
11. The platform shall support issuing cards in a batch.
12. The platform shall support reporting card loss and canceling the card loss report.

Fingerprint Management

1. The platform shall support up to 10 fingerprints per person.
2. The platform shall support fingerprint enrollment devices enrolling fingerprints.
3. The platform shall support enrolling fingerprints via enrollment station(communicating with the platform via network).
4. The platform shall support enrolling fingerprints via enrollment station(communicating with the platform via USB).
5. The platform shall support any card reader of remote access control devices enrolling fingerprints.
6. Fingerprint types: common, duress, and dismiss.
7. The platform shall support fingerprint duplicate checking and fingerprint quality grading.

Face Picture Management

1. The platform shall support only one face picture per person.
2. The platform shall support uploading local face pictures.
3. The platform shall support using a USB camera or a laptop with a camera enrolling face pictures.
4. The platform shall support enrolling face pictures via enrollment station (communicating with the platform via network).
5. The platform shall support enrolling face pictures via enrollment station (communicating with the platform via USB).
6. The platform shall support collecting face pictures via remote access control devices.
7. The platform shall support exporting all face pictures of all added persons as a ZIP file and setting a password for decompressing the ZIP file.
8. The platform shall support deleting a facial credential or batch deleting facial credentials.
9. The platform shall support saving the unreadable modeling data of profile pictures to the platform, so that the real profile pictures will not be displayed on the platform.
10. The platform shall support testing profile picture quality by access control devices and video intercom devices.
11. The platform shall support testing profile picture quality by barrier gates linked with a MinMoe face recognition terminal.

Password Management

1. The platform shall support setting the password (unique, containing 4 to 8 digits, and only one password per person)
2. The platform shall support generating PIN code automatically.

Iris Management

1. The platform shall support collecting 2 irises for each person.
2. The platform shall support collecting irises by device remotely as person credentials and applying irises to devices.

Static QR Code

1. The platform shall support generating static QR code based on person card No.
2. The platform shall support viewing and downloading static QR codes to distribute the codes to employees.

Dynamic QR Code

1. The platform shall support selecting the QR code mode as static or dynamic.
2. The platform shall support configuring the validity period (1 min by default) of a dynamic QR code.
3. The platform shall support employees viewing the dynamic QR code (automatically refreshed on schedule) and manually refreshing the QR code after logging in to the Mobile Client.

4.1.3 Resignation Management

1. The platform shall support resignation management.
2. The platform shall support deleting the resigned persons' access levels at the resignation date.
3. The platform shall support enabling/disabling attendance calculation during the period between applying for resignation and resignation date.
4. The platform shall support searching for access and attendance records of resigned persons.

4.1.4 Person Unautherization

The platform shall support the following functions:

1. Unauthorize selected persons.
2. Select a customized cause of unauthorizing when unauthorizing persons. Cancel the unauthorization of persons.
3. For unauthorized persons, their access levels, permission of vehicles, etc. will also be disabled.
4. Access control authentication by unauthorized persons will trigger alarms.

4.1.5 Position Management

1. The platform shall support adding, deleting, and editing positions.
2. The platform shall support importing positions in a batch.
3. The platform shall support linking a position to different persons.
4. The platform shall support linking a person to a position on the person information page.
5. The platform shall support viewing person numbers of a position and the number of resigned persons.

4.2 Vehicle

Vehicle Management

1. The platform shall support adding, editing, and deleting vehicles, including registered vehicles, temporary vehicles, and visitor vehicles. The editable information includes vehicle information and vehicle owner information (name, phone number).
2. The platform shall support adding custom vehicle information.
3. The platform shall support importing vehicles by vehicle list for configuration.
4. The platform shall support adding vehicles to the blocklist, editing the vehicles in the blocklist, and removing vehicles from the blocklist.
5. The platform shall support topping up the parking passes for registered vehicles, and topping up the vehicle owners' accounts.
6. The platform shall support applying vehicle lists to the ANPR camera to control the barrier gate via the camera.

ANPR (Automatic Number Plate Recognition)

1. Add an independent module for searching for passing vehicles and generating vehicle analysis reports.
2. The platform shall support searching for passing vehicles only detected by ANPR cameras and UVSSs (Under Vehicle Surveillance Systems).
3. The platform shall support generating vehicle analysis reports to show the number of passing vehicles detected by specified ANPR cameras during specified time periods (which is moved from the Intelligent Analysis module to the ANPR module).
4. The platform shall support setting a rule of regularly sending vehicle analysis reports to the target recipients.
5. The platform shall support recognizing license plates of the United Arab Emirates.

4.3 System Management

- ***General Settings***
- ***System Security***
- ***License Management***
- ***Others***
- ***Data Compatibility***

4.3.1 General Settings

The platform shall support the following features:

Quick Start

- Displaying instructions of new features and release notes on the Home page.
- Totally new navigation bar (The first-level menu is displayed on the top; the second-level and third-level menu is displayed on the left; the tab pages are displayed on the right).

- Quick configuration guide for Access Control and Time & Attendance.
- Up to 20 quick starts for different functions.
- Download center and task center.

Dashboard

The Dashboard shall support displaying the following data and performing the following tasks:

- The statistics of persons, devices, and attendance results.
- Pending tasks of attendance application flow.
- Real-time events and alarm notifications.
- The Person Credential Status, Device Status, and Attendance Report on the Home page supports click the pie chart for details.

Quick Access of Common Functions

The Quick Access of Common Functions shall support the following features:

1. Common Functions of System
   a. Quickly adding access control devices.
   b. Quickly adding video intercom devices.
   c. Quickly adding persons.
   d. Quickly getting person information from devices.
2. Common Functions of Access Control
   a. Quickly importing access control events from devices.
   b. Quickly assigning access levels to persons.
3. Common Functions of Attendance
   a. Quickly scheduling.
   b. Quickly viewing the total time card.
   c. Quickly viewing the weekly details.
   d. Quickly viewing the monthly details.

System

1. Self-adapting to screens with different resolutions.
2. Customizing column items of tables in the whole platform and automatically saving the selected column items.
3. Showing tables' columns completely of incompletely.

User Preference

1. Setting the site name.
2. Setting the first day of the week.
3. Setting the displayed temperature unit for the platform, including Celsius, Fahrenheit, and Kelvin.
4. Setting whether to display the mask related functions.
5. Setting the displayed calendar type for the platform, including Gregorian Calendar, Thai Calendar, and Nepal Calendar.

Printer Settings

Adding printers to the platform.

Card Template

Setting templates for printing cards.

Network Settings

1. Synchronizing time.
2. Setting AD (Active Directory) domain for synchronizing person information.
3. Providing protocols for devices accessing the platform. The supported protocol types include the ONVIF protocol and ISUP v5.0 or below.
4. Setting ports for WAN access.
5. Resetting device network information.

Storage Settings

1. Setting the local storage location, the picture or file quota, and the overwriting strategy for pictures and files.
2. Setting the retention period (unit: year) for the general data (such as events, logs) and the function data (such as card swiping records).

Other Settings

1. Setting holidays and the repeating strategy. The holiday type includes regular holiday (e.g., May Day) and irregular holiday (e.g., Mother's Day).
2. Setting email templates (including recipients, subject, and content) for regularly sending reports or events/alarms to the related persons.

Time Zone Settings

1. Reading time zone list from the operating system.
2. Setting the time zone for devices and getting the device's time zone.

Multi-Level Organization Management

1. Up to 10 lower-levels of an organization displayed as a tree structure.
2. Basic information: parent group, organization name, and description.

4.3.2 System Security

System Security

1. Support setting transfer protocol to HTTPS, and setting the IP address for receiving device information
2. Support setting the password for the local database

3. Support viewing the service component certificate, including Streaming Service and Cloud Storage Service.
4. Support setting security strategy for login, including locking IP address if the failed login attempts exceeded the limit, enabling maximum password age, automatically locking the Control Client after the defined time period of inactivity, and setting double authentications

User Security

1. Support setting permissions for roles, including resource access permissions, resource permissions, configuration and operation permissions, user status (inactivate or activate), and role effective period
2. Support manually adding users and user groups, importing AD (Activate Directory) domain users, activating or inactivating users, forcing logout, and so on
3. Support enabling auto update on the Web Client to allow the clients to be updated automatically if there are new versions available.

4.3.3 Data Backup and Restore

The platform shall support the following functions:

1. Back up data to the local PC, including configuration data and records.
2. Restore data.
3. Back up data to the FTP server, including configuration data and records.

4.3.4 System Hot Spare

Rose Hot Spare

Support enabling the hot spare function and setting the hot spare property (host server and spare server).

4.3.5 License Management

Basic Management

1. Support activating Licenses in online or offline mode
2. Support updating Licenses in online or offline mode
3. Support deactivating Licenses in online or offline mode
4. Support viewing the License details

SSP Expiration Prompt Settings

Support setting the expiration prompt (upgrading or adding values) for SSP (Software Service Program)

Camera License Settings

Support setting the Licenses of facial recognition camera, ANPR camera, and thermal camera for facial recognition, plate recognition, and temperature report

License Exception Detection

1. Support detecting whether the License file is damaged
2. Support detecting whether the number of resources exceeded limit
3. Support detecting whether the basic activation code is available
4. Support detecting whether there are multiple abnormal basic activation codes
5. Support detecting whether the update is limited
6. Support detecting whether the exception occurred when updating the License
7. Support restoring the server after the exception occurred

Cloud Computing Service Activation

1. Support activating the Amazon Web Service (AWS) and Microsoft Azure
2. Support activating cloud service except Amazon Web Service (AWS) and Microsoft Azure

4.3.6 Others

SSP Expiration Prompt

Support setting SSP expiration prompt for sending a reminding email to the user when the SSP or SUP is going to expire

Company Information

Support setting the company information

4.3.7 Data Compatibility

The platform shall support importing configuration files (including information about devices, persons, and events) of iVMS-4200 and iVMS-4200 AC.

4.4 Maintenance

- ***Scheduled Report***
- ***Server Network Management***
- ***Health Monitoring***
- ***Resource Status***
- ***System Log***

4.4.1 Scheduled Report

Support regularly calculating resource logs and device logs, and support sending reports to email.

4.4.2 Server Network Management

Server Usage Threshold

1. Support configuring usage thresholds of CPU and RAM of the whole server.
2. Support monitoring the usage of CPU and RAM in real time.

Network Timeout

Support configuring interaction request timeout according to the network status. The default timeout is 60s, which can be configured as 90s or 120s.

Health Check Frequency

1. Support checking device and service status.
   a. Device: encoding device, access control device, elevator control device, video intercom device, security control device, dock station, and network device.
   b. Server: recording server and intelligent analysis server.
   c. Checking frequency: minute, hour, day (minimum: 1 minute ; maximum : 30 days; default: 3 minutes).
2. Support checking device capabilities.
   Checking frequency: minute, hour, day (minimum: 1 minute; maximum; 30 days; default: 3 minutes).
3. Support checking recording status.
   Checking frequency: minute, hour, day (minimum: 1 minute ; maximum; 30 days; default: 3 minutes).
4. Support enabling alarm/event.
   Checking frequency: minute, hour, day (minimum: 1 minute ; maximum: 30 days; default: 3 minutes).

4.4.3 Health Monitoring

Real-time Overview

1. Support displaying device status (normal and exception), displaying server and resource status (normal, exception and warning). (Camera status details: camera offline, video loss, communication exception, recording exception, no recording schedule configured and arming exception).
2. Support refreshing manually and refreshing regularly the status of device, resource and server.

3. Support configuring refreshing regularly on the Mobile Client (by default, refreshing regularly on the web client every 3 minutes).
4. Support exporting data of all device status and resource status as EXCEL or CSV format.
5. Support exporting the selected data (all or exception data).
6. Support exporting only topology or topology with data when there is topology.
7. Support showing and refreshing topology hierarchy of network.
8. Support zooming in and out the topology, enlarging view, full screen, and self-adaptive.
9. Support searching for resource location and connection path.
10. Support viewing details, remote configuration and device logs.
11. Support displaying normal and exception data of System Management Server.
12. Support displaying real-time CPU, RAM, picture storage space, network(sending and receiving), and streaming gateway.
13. Supports batch displaying status of cameras, encoders, and decoders on RSM remote sites.
14. Support displaying network status (poor to good) for Smart Managed Switch.

History Overview

1. Support viewing the resource online rate.
2. Support sorting resource by total offline and offline times.
3. Support viewing device online rate.
4. Support sorting devices by total offline and offline times.
5. Support redirecting to the Device Logs page.
6. Support viewing recording integrity rate.
7. Support refreshing manually.
8. Support exporting data (all or exception data) as EXCEL or CSV format.
9. Support exporting the selected data (all or exception data).

4.4.4 Resource Status

Door

1. The platform shall support door status (network status, face recognition terminal network status, door status, configured door status, and card reader status) and checking time.
2. The platform shall support refreshing manually and refreshing regularly
3. The platform shall support exporting door status data.
4. The platform shall support viewing door details.
5. The platform shall supports viewing status of face recognition terminals.
6. The platform shall supports viewing card reader status.
7. The platform shall supports controlling door status remotely.

Elevator

1. The platform shall support viewing door status (network status and card reader status) and checking time.
2. The platform shall support refreshing manually and refreshing regularly

3. The platform shall support exporting elevator status data.
4. The platform shall supports viewing elevator resource status.
5. The platform shall supports viewing card reader status.

Camera

1. The platform shall support viewing camera status (video signal, recording status and arming status).
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting camera status data.
4. The platform shall support viewing camera resource details.
5. The platform shall support viewing camera status on Remote Site.
6. The platform shall support viewing camera's image diagnosis result.
7. The platform shall support viewing solar camera's mobile data report.

Access Control Device

1. The platform shall support viewing access control device status (network status, main/sub lane controller network, component, arming, tampering status and calling center from device) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting access control device status data.
4. The platform shall support viewing device details and the detailed information of linked resources (door and camera).

Elevator Control Device

1. The platform shall support viewing elevator control device status (network status, battery status, arming status and distributed elevator control device status) and checking time.
2. The platform shall support manual refresh and scheduled refresh
3. The platform shall support exporting data of elevator control device status.
4. The platform shall support viewing details of elevator control device.
5. The platform shall support controlling the elevator remotely.

Video Intercom Device

1. The platform shall support viewing video intercom device status (network status, arming status and calling center from device) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting data of video intercom device status.
4. The platform shall support viewing details of video intercom device.
5. The platform shall support dialing on the Mobile Client for indoor station.

Alarm Input

1. The platform shall support viewing alarm input status (name, area, serial No., version, disk status, network status, arming status and first added time) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting data of alarm input status.
4. The platform shall support viewing details of alarm input resource.
5. The platform shall support viewing alarm input status according to device type.

UVSS

1. The platform shall support viewing UVSS status (network status, line scan camera status, capturing camera status, and storage status) and checking time.
2. The platform shall support refreshing manually and refreshing regularly. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting UVSS status data.
4. The platform shall support viewing UVSS details

Optimus Resource

1. The platform shall support viewing the Optimus resource status (network status and resource status) and manufacturer.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting the Optimus resource status data.
4. The platform shall support viewing the Optimus resource details.

Streaming Server

1. The platform shall support viewing stream media server status (total streams, incoming streams, outgoing streams, CPU usage and RAM usage) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting the data of stream media server status.
4. The platform shall support viewing stream media server details.

Recording Server

1. The platform shall support viewing recording Server status (network status, CPU usage, RAM usage, hot spare properties, recording status, hardware status, HDD usage) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting recording server status data.
4. The platform shall support viewing recording server details.

Intelligent Analysis Server

1. The platform shall support viewing CPU usage and RAM usage of Intelligent Analysis Server and checking time.
2. The platform shall support refreshing manually and refreshing regularly.

3. The platform shall support exporting Intelligent Analysis Server status data.
4. The platform shall support viewing Intelligent Analysis Server details.

Encoding Device

1. The platform shall support viewing encoding device status (network status, HDD usage, recording status, manufacturer, hot spare properties, disk array, arming status) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting of encoding device status data.
4. The platform shall support viewing encoding device details.
5. The platform shall support viewing the battery status of solar camera.
6. The platform shall support viewing camera details.
7. The platform shall support switching stream type and access mode on Mobile Client.
8. The platform shall support viewing the N+1 status of NVR.

Security Control Device

1. The platform shall support viewing alarm device status (network status, battery status, and arming status) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting alarm device status data.
4. The platform shall support viewing alarm device details.

Dock Station

1. The platform shall support viewing dock station status (network status and HDD usage) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting dock station status data.
4. The platform shall support viewing dock station details.

On-Board Device

1. The platform shall support viewing on-board device status such as network status.
2. The platform shall support exporting on-board device status data.

Network Transmission Device

1. The platform shall support network transmission device status (network status, POE usage) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting network device status data.
4. The platform shall support viewing network transmission device status (network status, CPU usage, RAM usage, occupied ports, PoE usage, device exception as first added time) and checking time.

Decoding Device

1. The platform shall support viewing decoding device network status and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting decoding device status data.
4. The platform shall support viewing decoding device details.

IP Speaker

1. The platform shall support viewing IP speaker status.
2. The platform shall support exporting IP speaker status data.
3. The platform shall support viewing IP speaker resource details.

Security Inspection Device

1. The platform shall support viewing security inspection device status.
2. The platform shall support exporting security inspection device data.
3. The platform shall support viewing security inspection device resource details.

BACnet Device

1. The platform shall support viewing BACnet device status.
2. The platform shall support exporting BACnet device status data.
3. The platform shall support viewing BACnet device resource details.

Digital Signage Terminal

1. The platform shall support viewing digital signage terminal status.
2. The platform shall support exporting digital signage terminal status data.
3. The platform shall support viewing digital signage terminal resource details.

Interactive Flat Panel

1. The platform shall support viewing interactive flat panel status.
2. The platform shall support exporting interactive flat panel status data.
3. The platform shall support viewing interactive flat panel resource details.

Remote Site

1. The platform shall support viewing remote site status (network status and default stream) and checking time.
2. The platform shall support refreshing manually and refreshing regularly.
3. The platform shall support exporting remote site status data.
4. The platform shall support viewing remote site details.
5. The platform shall support switching stream type (main stream/sub-stream) and access mode (direct connection or proxy) on Mobile Client.
6. The platform shall support viewing the configured recording schedules and recording status of remote sites.

4.4.5 System Log

Server Logs

1. Support searching for the log according to Remote Site, log type, log trigger, filtered resource and selected time.
2. Support exporting Remote Site logs and Central System logs as EXCEL or CSV format.

Device Logs

1. Support searching for the local logs of encoding device, security control device, decoding device, access control device, elevator control device and network device.
2. Support exporting local logs of the device.
3. Support exporting online/offline logs of multiple devices.
4. Support exporting online/offline logs for the device.
5. Support displaying by graph and list about device online duration records and the latest offline time.

Resource Logs

1. Support searching for recording status of resource.
2. Support viewing recording status at each time point.
3. Support searching for online/offline log.
4. Support displaying by graph and list about device online duration records and the latest offline time.
5. Support exporting resource logs.

Maintenance Logs

1. Support searching for maintenance logs according to the pending task name, objects undergoing the health check, risk level, handler, handling time, and handling status.
2. Support viewing maintenance logs.
3. Support exporting maintenance logs.

4.4.6 Health Check

Health Overview

1. Support viewing the last check result, including the last check time and issue overview.
2. Support viewing the past pending tasks.

Manual Check

1. Support manually checking the health status of devices, systems, and services.
2. Support checking various items, including platform operation pre-alarms, record receiving exceptions, offline devices or resources, device power battery exceptions, disk or HDD

exceptions, device security, device component exceptions, event alarm configuration exceptions, scheduled report configuration exceptions, video recording exceptions, and video image exceptions.
3. Support viewing the check results, including the item name, item description, handling suggestion, risk level, and check time.
4. Support ignoring certain check items, and the ignored items will be skipped in the following checks.
5. Support viewing the check results according to the check type and object.
6. Support filtering the check results by the following conditions: the check item, check object type, risk level, handling status, and custom conditions.
7. Support ignoring certain check items or batch adding check items to the pending task list.
8. Support exporting the check result list.

Pending Task

1. Support viewing the imported pending tasks.
2. Support editing the pending task name, risk level, and note.
3. Support batch handling, ignoring, deleting, exporting pending tasks, and setting email notifications.
4. Support adding custom pending tasks.

Scheduled Health Check

Support configuring scheduled health checks, including the check item, check period, and automatically sending the health check report.

4.5 Control Panel

Basic Functions

1. Support logging by IP address or domain name, and Support enabling auto-login
2. Support remembering historical server addresses and logged-in users
3. Support grouping modules and customizing the module arrangement on the control panel
4. Support adding modules to the navigation bar, clicking a module on navigation bar to quickly access the module, and searching for modules
5. Support displaying the resource updating indicator, time, and CPU usage/network speed on the title bar of Control Client
6. Provide the guidance about how to start using the Control Client for the first-login user

Control Panel Operations

1. Support displaying the default control panel for the first-login user
2. Support editing the name and the layout (including adding windows, deleting windows, editing windows, moving windows, and adjusting the window size) of control panel
3. Support restoring to the default control panel when editing

4. Support self-adaptive layout based on different screen resolutions
5. Support managing multiple control panels, including adding, deleting, and switching control panels
6. Support opening and closing auxiliary screen for the control panel
7. Support displaying the control panel in the full screen mode and exiting the mode, maximizing or minimizing the window, and displaying the window in auxiliary screen
8. Support restoring the control panel after restarting the Control Client or switching users

System Configuration and Help

1. Support setting general parameters, including network parameters, large-scale display mode, maximum mode, and file saving path
2. Support switching Home page modes, including Menu Mode and Visualization Mode. The settings will take effect after restarting the Control Client.
3. Support displaying the License information of the platform

4.6 Basic Video

- ***System and Resource Management***
- ***Video Security***
- ***Video Search and Exporting***
- ***Permission Management***
- ***Evidence Management***
- ***Event and Alarm***
- ***Dock Station and Body Camera***

4.6.1 System and Resource Management

Network Management

1. The platform shall support discovering online devices. The platform shall support discovering devices in the same network as the client so that devices can be added in LAN/WAN.
2. The platform shall support adding encoding devices by IP address, domain name, and Hik-Connect NNDS via ISUP so that devices can be added in LAN/WAN.
3. The platform shall support adding devices from a different network segment which can be accessed by the server.
4. The platform shall support adding encoding devices by IPv4/IPv6.

Time and DST

1. The platform shall support manually setting time zone and getting device's time zone. The platform shall support setting Client time/Server time as the time of the Client.
2. The platform shall support daylight saving time. The platform shall support tagging the repeated video caused by the daylight saving time.

Device Management

1. The platform shall support adding Hikvision cameras, NVRs and DVRs.
2. The platform shall support adding cameras via open network video interface.
3. The platform shall support adding body cameras.
4. The platform shall support adding dock stations.
5. The platform shall support importing channels managed on Hik-Partner Pro.
6. The platform shall support importing Dahua devices.
7. The platform shall support displaying device details such as serial number, firmware version, and information about linked cameras, alarm input, and alarm output.
8. The platform shall support device maintenance. Refer to ***Maintenance*** .
9. The platform shall support displaying device details for device management, including the device serial No., firmware version, supported camera channels of encoding devices, alarm inputs, and alarm outputs.

Server Management

1. The platform shall support streaming media server.
2. The platform shall support storage servers such as pStor Cluster Service, Hybrid SAN, Cluster Storage, and NVR (only for picture storage).
3.
4. The platform shall support DeepinMind server.
5. The platform shall support monitoring the storage capacity of the local disk. The platform shall support viewing the channels configured with storage servers. The platform shall support displaying the server version. The platform shall support going to the configuration page of storage servers.

Resource Management

1. The platform shall support grouping encoding devices including cameras, alarm inputs/outputs.
2. The platform shall support batch adding resources such as cameras, alarm inputs/outputs to the E-map to view monitoring effects.
3. The platform shall support configuring devices remotely.
4. The platform shall support batch changing device passwords.
5. The platform shall support batch applying and getting channel names.
6. The platform shall support batch getting the configured presets from PTZ cameras.
7. The platform shall support batch getting the configured recording schedule from devices.
8. The platform shall support batch copying the camera parameters to meet the requirements of multi-channel management under multi-device.

Batch Upgrade Firmware

1. The platform shall support upgrading via current Web Client, via Hik-Connect, via FTP. The platform shall support displaying upgrading status.
2. The platform shall support upgrading devices through server network and client network.

Reliable and Flexible Storage Configuration

1. The platform shall support configuring parameters for storing videos. The platform shall support configuring the stream type, recording schedule of time or event, and the expired time of video.
2. The platform shall support configuring video storage settings. The platform shall support storing real-time video in encoding device/pStor/CVR/cloud storage server.
3. The platform shall support configuring picture storage settings. The platform shall support storing pictures to the local server/encoding device/pStor/CVR/cloud storage server.
4. The platform shall support configuring the real-time recording schedule. The platform shall support configuring encoding device/pStor/CVR/cloud storage server as the main storage, and pStor/CVR/cloud storage as the auxiliary storage.
5. The platform shall support configuring copy-back recording. The platform shall support configuring encoding device/pStor/CVR/cloud storage server as the main storage, and pStor/CVR/cloud storage as the auxiliary storage.
6. The platform shall support setting N+1 hot spare for NVR to increase video storage liability.
7. The platform shall support setting pStor Cluster and N+1 hot spare for CVR.
8. The platform shall support configuring the start/end time of sending the video recorded by CVR back to the platform. The platform shall support sending the previously recorded video back to the platform.
9. The platform shall support managing CVR server, cloud server, pStor. The platform shall support adding them, viewing the storage status, viewing the configured channels for the server, displaying the server version, and jumping to web page to configure storage servers. The platform shall support managing recording servers (CVR server, cloud server, and pStor).

Stream Management

1. The platform shall support streaming from the device directly, so that devices and the Client can work in the same LAN.
2. The platform shall support streaming via the internal stream media of HikCentral Professional so that multiple Clients can stream from a device simultaneously, user in WAN can access the device in LAN, and HCP can stream from devices accessed the platform via ISUP.
3. The platform shall support adding external Stream Media Server. The platform shall support streaming from a designated external stream media server.
4. The platform shall support configuring the stream mode for device and Client.

Bandwidth Management

1. The platform shall support the smooth stream. The platform shall support starting live view/playback in smooth stream, which can self-adapt the bandwidth.
2. The platform shall support automatically-adjusting stream by switching among main/sub/smooth stream in live view.
3. The platform shall support switching to sub stream in playback if dual stream recording is configured.
4. The platform shall support downloading bandwidth. The platform shall support batch configuring the maximum bandwidth of downloading video from NVR to the Client.

5. The platform shall support downloading bandwidth from the Client. The platform shall support configuring the maximum bandwidth of downloading videos from pStor to the Client.
6. The platform shall support batch upgrading firmware. The platform shall support configuring the maximum quantity of firmware that is updated simultaneously.
7. The platform shall support copying bandwidth back. The platform shall support configuring the maximum bandwidth of copying video back.

Network Security

1. The platform shall support stream encryption. Users shall only be able to start live view/ playback after entering the encryption key.
2. The platform shall support batch changing device passwords.

4.6.2 Video Security

Display Channel Status

1. The platform shall support viewing the thumbnail of cameras on the resource tree.
2. The platform shall support displaying the number of online cameras / total cameras in each area on the resource tree. The platform shall support only displaying online cameras.
3. The platform shall support displaying alarm status on the resource tree and map, and viewing alarm details.

Single-Channel Operation

1. The platform shall support dragging the camera from the map to start live view/playback.
2. The platform shall support locating a single camera on the map.
3. The platform shall support capturing and VCA picture search (intelligent devices).
4. The platform shall support turning on/off the audio and adjusting volume, and when turning on the audio, a status prompt will appear.
5. The platform shall support configuring whether to enable audio by default for all channels.
6. The platform shall support creating a zooming area. The platform shall support rolling the mouse to zoom in. The platform shall support displaying videos in thumbnail view.
7. The platform shall support manually arming/disarming areas by cameras to receive audible and visual alarms. The platform shall support clearing audible and visual alarms.
8. The platform shall support the PTRZ (panning, tilting, rotating, and zooming) function.
9. The platform shall support video enhancement. The platform shall support adjusting brightness, contrast, saturation, and hue.
10. The platform shall support switching the stream type among main stream, sub-stream,smooth stream, and fourth stream.
11. The platform shall support switching the stream type among the main stream, sub-stream, and smooth stream.
12. The platform shall support multiple fisheye dewarping modes. The platform shall support fisheye expansion and installation mode selection. The platform shall support a maximum of 14 expansion modes.

13. The platform shall support displaying video on the smart wall via decoder or graphic card.
14. The platform shall support PTZ control (only in live view). The platform shall support locking time, single/batch wipers, 3D positioning, presets (getting presets from device, setting, and calling), patrol, pattern, focus, focal length, iris, quick focus, light, lens initialization, manual tracking, manual face-capturing, configurable control priority, and park action.
15. The platform shall support instant playback (only in live view); The platform shall support selecting time of playback: 30s, 1 min, 3 min, 5 min, 8 min, and 10 min.
16. The platform shall support alarm output control.
17. The platform shall support two-way audio.
18. The platform shall support printing captured pictures.
19. The platform shall support searching pictures by picture (intelligent devices).
20. The platform shall support displaying camera information: the frame rate, stream, video standard, total connected cameras, network status, signal status, video status, access mode, channel type, device name, IP address, protocol type, main/auxiliary storage, and area.
21. The platform shall support arming control: arming or disarming cameras.
22. The platform shall support creating zooming areas and displaying it in a new window.
23. The platform shall support tagging videos. The platform shall support setting the time range and description for tags.
24. The platform shall support people density analysis (DeepinMind Server).
25. The platform shall support VCA search.
26. The platform shall support the park action.
27. The platform shall support exporting video files (only in playback).
28. The platform shall support video clipping (only in playback).
29. The platform shall support locking video (only in playback).
30. The platform shall support frame-extracting playback.
31. The platform shall support rotating an image.
32. The platform shall support generating VR panoramic images and clicking to view a specified image.
33. The platform shall support adding cameras with the perimeter scan feature and performing ROI operations.
34. The platform shall support capturing pictures in real-time, and support viewing related videos according to captured pictures.
35. The platform shall support displaying body cameras on Google Map. The platform shall support displaying body cameras in a selected area.

Shortcuts

1. The platform shall support shortcut operation. The platform shall support enabling/disabling fisheye expansion, manual capturing, manual recording (only in live view), zoom in/out, switching stream, start/stop live view, and PTZ operations (only in live view).
2. The platform shall support customizing camera logic ID.
3. The platform shall support configuring short cuts for different functions.
4. The platform shall support pressing Ctrl to select cameras from different areas to perform auto-switch and live view of cameras added to different areas.

Web Page

1. The platform shall support adding multiple web pages to display window.
2. The platform shall support adding web pages to Favorites.

Live View

1. The platform shall support a maximum of 64 cameras in single-window live view. The platform shall support a maximum of 256 cameras in four-window live view.
2. The platform shall support starting live view of one or multiple camera(s).
3. The platform shall support auto-switch windows with the switching time interval of 5s, 10s, 20s, 30s, 1min, 3min, 5min. The platform shall support pausing and playing videos.
4. The platform shall support displaying vehicle passing events. The platform shall support adding vehicle license number to the vehicle plate list.

Playback

1. The platform shall support playback of a maximum of 16 cameras in single-window view.
2. The platform shall support displaying days with recorded video. The platform shall support playback of a certain day/time. The platform shall support dragging the time slider.
3. The platform shall support filtering video by video type (time recording schedule, event recording schedule, manual recording, and ANR recording), by tag type (event tag, manual recording tag, and other tags), and by storage type.
4. The platform shall support grouping videos into person and vehicle, tagging person and vehicle in video, and filtering video according to the type of person or vehicle appearance.
5. The platform shall support displaying the image when you drag the time slider.
6. The platform shall support switching between synchronous/asynchronous playback.
7. The platform shall support displaying the video image in thumbnail view during playback. The platform shall support going to the corresponding time if users click the thumbnail view.
8. The platform shall support play the video back at the speed of 1x, 2x, 4x, 8x, /2x, 1/4x, and 1/8x.
9. The platform shall support half-interval search.
10. The platform shall support playing, pausing, normal/reverse single-frame playback.

Visual Tracking

1. The platform shall support switching from a current camera to the associated cameras in the visual tracking mode during live view.
2. The platform shall support switching from a current camera to the associated cameras in the visual tracking mode during playback, and exporting the video.
3. The platform shall support switching to sub stream for cameras configured in visual tracking.
4. The platform shall support configuring whether to automatically start to play the recorded video.

View Management

1. The platform shall support private view and public view.
2. The platform shall support saving view during the live view or playback, and the platform shall support saving cameras, window divisions, presets, auto-switch settings, digital zoom settings, map, and web page.
3. The platform shall support adding views directly by batch adding cameras in different areas. The platform shall support configuring the camera stream type. The platform shall support configuring auto-switch interval.
4. The platform shall support previewing views in thumbnail.
5. The platform shall support dragging a camera to the view to start live view or playback.
6. The platform shall support editing views. The platform shall support editing auto-switch interval, pause, change view, edit camera information, etc when playing the video.
7. Supports sharing private views.
8. The platform shall support displaying views on the smart wall.
9. The platform shall support configuring the default view upon next login.

Favorites

1. The platform shall support adding frequently used cameras to Favorites.
2. The platform shall support sharing resources with other users and displaying the favorite resources that others shared with you.
3. The platform shall support auto-switch according to views in Favorites.

Fault Diagnosis

1. The platform shall support viewing error codes and error messages when starting live view failed. The platform shall support illustrating the detailed streaming path. The platform shall support node-related health status, logs, and history events. The platform shall support submitting reasons of operation failure.
2. The platform shall support displaying playback error codes, error messages, streaming path. The platform shall support node-related health status, logs, and history events. The platform shall support submitting reasons of operation failure.

4.6.3 Video Search and Exporting

Video Search

1. Support searching by time range, stream type, storage location, and video segmentation.
2. Support searching by tag and keyword.
3. Support searching for the video footage triggered by transaction event which contains POS information.
4. Support searching for the video footage triggered by ATM event.

5. Support searching for video files where VCA events occur. VCA Events include dynamic analysis, line crossing, and intrusion detection.
6. Support searching for the camera's locked video footage.

Video Exporting

1. Support exporting/batch exporting video.
2. Support multiple formats including MP4, AVI, and EXE.
3. Support setting the storage path of the file to be exported. Support backing up the files to network disk.
4. Support exporting after encryption.
5. Support combining exported files into one file.
6. Support managing downloading tasks. Support starting/stopping/deleting/downloading all tasks. Support continuing downloading after network is reconnected.
7. Support scheduling 4 time periods for downloading video in spared time.
8. Support saving video as evidence.

4.6.4 Permission Management

1. Support starting live view, manual capturing, printing, searching video, exporting video, manual recording, starting two-way audio, and enabling audio permission by camera.
2. Support enabling/disabling playback permission by camera. Support configuring user playback permission by minute/hour/day.
3. Support enabling/disabling video tag, lock permission by camera. Video lock permissions includes setting permission of adding, deleting, editing, and searching video.
4. Support enabling/disabling PTZ permission. Support configuring and operating PTZ.
5. Support configuring double-authentication for live view, playback, and video export.
6. Support enabling/disabling the public view permission. Support adding, deleting, and editing camera permissions.
7. Support enabling/disabling the permission of visual tracking.
8. Support configuring stream type permissions in live view: main stream, sub stream, and smooth stream.

4.6.5 Evidence Management

Support evidence management. Refer to ***Evidence Management*** .

4.6.6 Scheduled Camera

Scheduled Capture

1. Support configuring capturing schedules for multiple cameras. For speed domes, support setting presets and capturing pictures on presets.
2. Support sending scheduled capturing reports via email.
3. Support searching for scheduled captures by schedule, camera, and time. Support viewing and exporting captures and sending captures by email.

Time-Lapse Photography

1. Support generating time-lapse videos based on multiple captured pictures.
2. Support searching for time-lapse videos in NVRs by video length, time period, and total time range.

4.6.7 Event and Alarm

Support event and alarm management. Refer to ***Event and Alarm*** .

4.6.8 Dock Station and Body Camera

Dock Station Management

1. Support managing dock station groups. Support importing persons and displaying person permission levels.
2. Support three-level permission management: dock station group, super user, and person. Support setting person as super user.
3. Support multiple dock station person groups.
4. Support applying person information (which should correspond to the account information of body camera) to the dock station.
5. Support managing cards, and applying card information to dock stations.
6. Support managing fingerprints. Support applying fingerprint information to dock stations.
7. Support managing profiles and applying profiles to dock stations.
8. Support filtering according to applying status. Support displaying users failed to be applied and reapplying them.
9. Support configuring copyback time for dock stations. Support setting storage location to CVR or pStor.

File Search and Management

1. Support searching files by time, dock station group, file format (video, picture, and audio).
2. Support exporting searched files, and saving video to evidence.
3. Support searching for videos for GPS track playback.
4. Support configuring visible channels according to areas for users in the situation of multiple managers.

Body Camera

1. Support locating body cameras on Google map. Support locating body cameras in a specified area.
2. Support live view, playback, and two-way audio for body cameras.
3. Support linkage actions on the client for body camera events.

4.7 Smart Wall

- ***Device Management***
- ***Configuration and Management***
- ***System Management***

4.7.1 Device Management

1. Detect online devices: in the same network segment with the server or the client via SADP.
2. Add devices via IP address, IP segment, and port segment.
3. Jump to the remote configuration page of the device via web browser.
4. Cascade configuration of decoders (69-series) and smart wall controllers (C10S-series).
5. View the sub board status of signal source and decoding output, and the signal status.
6. Display the specified view on the smart wall.

4.7.2 Configuration and Management

Smart Wall Management

1. The platform shall support adding, deleting, and editing the LCD smart wall.
2. The platform shall support adding, deleting, and editing the LED smart wall.
3. The platform shall support batch editing resolutions of the outputs of decoders.
4. The platform shall support linking the decoding output with the window and releasing this linkage.
5. The platform shall support configuring the audio port of the smart wall.
6. The platform shall support setting the background color/picture of the output.
7. The platform shall support displaying the decoding output port No. on the large screen.
8. The platform shall support configuring stream types (sub/main stream) and auto-switching the stream type.
9. The platform shall support displaying and downloading the camera ID.
10. The platform shall support signal sources streaming the live view of channels in a batch.
11. The platform shall support specifying the schedule play time for a view. The view will be displayed once within the specified time.
12. The platform shall support batch playing videos sequentially in the following windows starting from the specified window.

Open Window and Display on Smart Wall

1. The platform shall support window division mode (4/9/16/36-window), locking window, and enlarging/restoring the size of the sub-window by double-click.
2. The platform shall support creating roaming windows, deleting, and moving them, and sticking them on top/at bottom, and changing the sizes of roaming windows.
3. The platform shall support enabling/disabling the VCA rule.
4. The platform shall support displaying the window No.
5. The platform shall support displaying the local signal source (single or in a batch) on the smart wall via ONVIF, Hikvision Protocol, or the domain name of the camera.
6. The platform shall support controlling the video wall display of a camera for auto-switch in a single window, including pausing, continuing, viewing the last/next auto-switch, and adjusting the auto-switch schedule.
7. The platform shall support switching the main/sub stream of the signal source manually.
8. The platform shall support PTZ control.
9. The platform shall support customizing the camera ID displayed on the smart wall.
10. The platform shall support the client displaying the images the same as those on the full smart wall, smart wall playback, and control of the video image in the window.
11. The platform shall support displaying the status of decoding outputs and signal sources.
12. The platform shall support the client displaying the images the same as those on the full smart wall.
13. The platform shall support adding a logo on the window.
14. The platform shall support configuring the background picture.
15. The platform shall support display the desktop on the smart wall.
16. The platform shall support jointing windows.
17. The platform shall support displaying desktop on the smart wall.

APP Application

1. The platform shall support switching signal source for displaying on smart wall via pad.
2. The platform shall support LED and LCD smart walls.
3. The platform shall support up to 8 smart walls.
4. The platform shall support virtual screen split, dragging to open a window, roaming windows, zooming a window, window division, etc.

LED Smart Wall

1. The platform shall support rolling/static captions.
2. The platform shall support layout preview of the smart wall.
3. The platform shall support joining windows.
4. The platform shall support custom and virtual window division.

View

1. The platform shall support adding, deleting, editing, and searching the view/view group.
2. The platform shall support switching the view schedules by weeks and playing views at specific times.
3. The platform shall support displaying views on smart wall by the schedule.
4. The platform shall support editing the view schedule.
5. The platform shall support setting public views and private views.
6. The platform shall support viewing thumbnails of views by hovering the cursor on the view list.

Keyboard

1. The platform shall support accessing network keyboards (Model: DS-1100KI(B), DS-1105KI, and DS-1600KI(B)).
2. The platform shall support auto-switching alarms on smart wall and stopping displaying after the alarm is acknowledged.
3. The platform shall support displaying on smart wall by pressing the camera ID on the keyboard.

4.7.3 System Management

Permission Management

1. Support controlling the permission of accessing the smart wall module.
2. Support assigning operation permissions by smart walls.
3. Support assigning permissions for adding, deleting, editing, and searching data by smart walls.
4. Support assigning permissions according to decoders and division controllers.
5. Support adding, deleting, editing, and searching permissions by decoders and smart wall controllers.

Streaming Configuration

1. Support global settings of the stream type (sub/main stream) of the smart wall display and switching the stream type according to the window division mode.
2. Support configuring the streaming media according to areas for displaying on smart wall.

Alarm Linkage

1. Support smart wall displaying for alarm linkage of a specific camera in a single or multiple windows.
2. Support displaying the view of a specific decoding wall linked with a monitor view on the smart wall.
3. Support configuring the duration of displaying alarms on the smart wall, whether overwriting the previous alarm, and the stream type of the smart wall display (sub/main stream).
4. Support automatic window division for linkage alarms displayed on the smart wall.

5. Support red-frame-highlighted linkage alarms displayed on the smart wall.
6. Support configuring online/offline detection alarm of decoders/smart wall controllers.

Data Backup and Restoring

Support backing up and restoring the data of smart walls.

Maintenance Status

Support viewing the maintenance status of decoders and smart wall controllers.

4.8 Remote Site Management

Site Management

1. The platform shall support managing 1,024 Remote Sites, including manually adding sites or sites registering to the Central System.
2. The platform shall support remotely configuring the Remote Sites, getting and viewing the resource changes of Remote Sites.
3. The platform shall support backing up the database of Remote Sites to the Central System manually or by period (day, week, or month).
4. The platform shall support managing Remote Sites and cameras of Remote Sites on the map.

Camera Management

1. The platform shall support going to the Remote Site. The configurations on the Remote Site are the same as that in the Central System.
2. The platform shall support managing cameras of the Remote Site: select cameras from the Remote Site to import them to the Central System, get and apply cameras' names, import cameras, display the imported cameras on the Central System after switching sites.
3. The platform shall support applying recording schedules and storage configurations of the Central System to cameras on the Remote Site, and batch copying the settings of cameras on the Remote Site.

Door Management

1. The platform shall support going to the Remote Site. The configurations on the Remote Site are the same as that in the Central System.
2. The platform shall support managing doors of the Remote Site, including selecting doors from the Remote Site to import them to the Central System, getting and applying the names of doors, getting and remotely controlling the status of doors, displaying the imported build-in camera channels of access control device on the Central System after switching sites.

Streaming Management

The platform shall support setting Streaming Servers for Remote Sites in the Central System and getting streaming via up to two Streaming Servers (on the site and the Central System).

Video Application, Search, and Exporting

Refer to ***Basic Video*** .

Evidence Management

Refer to ***Evidence Management*** .

Event and Alarm

1. The platform shall support importing events and alarms from cameras on the Remote Site to the Central System for configuring alarm related parameters.
2. The platform shall support receiving and acknowledging events and alarms (with maintenance information) from cameras on the Remote Site.
3. The platform shall support receiving and acknowledging alarm input events and alarms from encoding devices on the Remote Site.
4. The platform shall support receiving and acknowledging face related alarms (including face matched/mismatched, frequently/rarely appeared, abnormal temperature, and no mask) from the Remote Site.
5. The platform shall support receiving and acknowledging access control maintenance related alarms from encoding devices, decoding devices, Recording Servers, and Streaming Servers on the Remote Site.
6. The platform shall support importing events and alarms from doors on the Remote Site to the Central System for configuring alarm related parameters.
7. The platform shall support receiving and acknowledging events and alarms (with maintenance information) from doors on the Remote Site.

ANPR

1. The platform shall support receiving ANPR results from cameras on the Remote Site.
2. The platform shall support searching for ANPR records from cameras on the Remote Site.
3. The platform shall support searching for and exporting vehicle analysis reports generated by cameras on the Remote Site.

Face

1. The platform shall support searching for face pictures captured by cameras on the Remote Site.
2. The platform shall support searching for face pictures of cameras on the Remote Site by picture.
3. The platform shall support searching for face pictures of cameras on the Remote Site by person feature.
4. The platform shall support viewing real-time captured face pictures and comparison results on the Remote Site.

Human Body

1. The platform shall support searching for human body pictures captured by cameras on the Remote Site.
2. The platform shall support searching for human body pictures of cameras on the Remote Site by picture.

Intelligent Analysis

1. The platform shall support importing cameras of the Central System to the Remote Site for configuring intelligent analysis reports, including people counting reports, people density analysis reports, heat analysis reports, queue analysis reports, and person feature analysis reports.
2. The platform shall support importing cameras of the Central System to the Remote Site for configuring temperature analysis reports.
3. The platform shall support searching for and exporting intelligent analysis reports generated by cameras imported to the Central System, including people counting reports, people density analysis reports, heat analysis reports, queue analysis reports, and person feature analysis reports.
4. The platform shall support searching for and exporting temperature analysis reports generated by cameras imported to the Central System.

Maintenance

1. The platform shall support getting the maintenance information of cameras on the Remote Site, which is the same as that displayed on the Central System.
2. The platform shall support getting the maintenance information of encoding devices, decoding devices, Recording Servers, and Streaming Servers on the Remote Site. The site's maintenance information is the same as that displayed on the Central System, but users cannot click to quickly go to the details page.
3. The platform shall support batch displaying the status of cameras, encoders, and decoders on Remote Sites.

4.9 Intelligent Recognition

4.9.1 System and Resource Management

Resource Management

1. Support adding DeepinMind servers to the platform; the added DeepinMind servers support the following features:
   a. Accessing DeepinMind servers by internet.
   b. Jumping to the web page of a DeepinMind server to configure its parameters.
   c. Linking cameras to DeepinMind servers for intelligent analysis.
2. Support adding facial recognition cameras to the platform and all features for the basic management of encoding devices.
3. Support adding DeepinMind NVRs and all features for the basic management of encoding devices.
4. Support specifying the channels for vehicle analysis and face / human body features analysis on the license details page.

Face Comparison Groups

1. Support the following features related to face comparison groups:
   a. Adding and managing multiple face comparison groups.
   b. Adding persons to the person list or removing persons from the list.
   c. Displaying the number of face pictures in each face comparison group."
2. Support importing face list libraries and face data.
3. Support importing face data from enrollment stations.
4. Support importing the selected face data from encoding devices and facial recognition servers.
5. Support exporting the face library list.
6. Support batch applying face data to devices and displaying the following data applying information in the Applying Center:
   a. All face data failed to be applied.
   b. The number of face data items to be applied.
   c. The list of face data items to be applied.
   d. The number of cameras to which face data failed to be applied.
   e. The list of cameras to which face data failed to be applied.
   f. The number of cameras to which face data has NOT been applied.
   g. The list of cameras to which face data has NOT been applied.

4.9.2 Face Recognition

Face Comparison Tasks

1. Support configuring face comparison tasks for cameras, DeepinMind NVRs, DeepinMind servers.
2. Support configuring face comparison tasks for facial recognition cameras, DeepinMind NVRs, DeepinMind servers. The configuration options include:
   - Task Schedule Templates
   - Devices / Cameras Which Perform the Analysis

- Face Comparison Groups
- Similarities

3. Support displaying the list of face comparison tasks and filtering the tasks by task name, arming schedule, device for analysis, face comparison group, and camera.

Frequently Appeared Person Analysis

1. Support configuring frequently appeared person analysis tasks for DeepinMind NVRs and DeepinMind servers.
2. Support configuring parameters for a frequently appeared person task, including the task schedule template, device for analysis / camera, face comparison group, time period, appeared times, counting interval, and similarity.
3. Support displaying the frequently appeared person analysis tasks in a list and filtering tasks in the list by task name, task schedule template, device for analysis, and camera.

Rarely Appeared Person Analysis

1. Support configuring rarely appeared person analysis tasks for DeepinMind NVRs.
2. Support configuring parameters for a rarely appeared person analysis task, including the task schedule template, device for analysis / camera, face comparison group, time period, appeared times, counting interval, similarity, and reporting time.
3. Support displaying rarely appeared person analysis tasks in a list and filtering the tasks by task name, task schedule template, device for analysis, and camera.

Face Data Storage

1. Support storing the matched face pictures on the platform or the storage server if the face recognition cameras alone are used for face recognition.
2. Support storing the captured face pictures and the matched ones on the DeepinMind NVRs if the combination of network cameras and DeepinMind NVRs is used for facial recognition.
3. Support storing the captured face pictures and the matched ones on the DeepinMind servers if the combination of network cameras and DeepinMind servers is used for facial recognition.

Event and Alarm

1. Support receiving near-instant face comparison events of the selected face comparison groups.
2. Support receiving near-instant face mismatch events of the selected face comparison groups; The mismatch mechanism is as follows: if a captured face picture cannot match any face picture in the specified face comparison group(s) within the time period specified in a combined alarm, the event will be regarded as a face mismatch event; while if the captured face picture mismatches face pictures in all groups, the event will be regarded as a stranger event.
3. Support searching rarely appeared person events by device and face comparison group.
4. Support searching frequently appeared person events by device.
5. Support searching no-face-mask events by channel and face comparison group.
6. Support other events related to face detection performed by cameras, such as face capture events and face detection events.

Face-Based Monitoring

1. Support displaying captured face pictures in nearly real time; Support viewing the live video streamed from a camera if its captured pictures matches face pictures in face comparison groups.
2. Support viewing statistics of face pictures captured on the current day and face-matched events that occurred on the current day.
3. Support monitoring based on the face comparison groups; Support monitoring multiple groups at the same time.
4. Support monitoring face recognition related events in nearly real time, including face capture events, face-matched events, face mismatch events, frequently appeared person events, and rarely appeared person events; once the system detects one of these events, a window showing related picture(s) / video(s) will pop up in nearly real time on the Control Client.
5. Support adding the captured face pictures to face comparison groups.
6. Support generating patterns (i.e., the tracks of detected persons) basing on their face pictures (i.e., the captured face pictures).
7. Support verifying the persons' identities by their face pictures (i.e., the captured face pictures).
8. Support viewing the capture histories of the matched persons in the monitoring module.
9. Support selecting facial features of the captured pictures and displaying these features.
10. Support displaying facial features in nearly real time, including smile or not, whether wearing glasses, and whether wearing mask.

Record Search and Export

1. Support searching face pictures captured by devices by channel, time, and facial features (whether wearing glasses, and smile or not).
2. Support searching face pictures by picture; the available search conditions include time, channel, similarity, and face picture.
3. Support searching face comparison groups by time, group name, and person information (person name or ID).
4. Support searching frequently appeared persons by time, task, and appeared times.
5. Support searching rarely appeared persons by time, task, and appeared times.
6. Support exporting the matched results to the local PC; the exported information includes the person information and video information.
7. Support adding the matched face pictures to face comparison groups.
8. Support identity verification according to the captured face picture; the available search conditions include the captured face picture, matched face picture, and similarity.

Pattern Generation

1. Support generating patterns (i.e., the tracks of persons) of the matched persons.
2. Support playing back the patterns in time sequence on the map.

4.9.3 Human Body Recognition

Task Management

1. Support configuring human body recognition tasks for DeepinMind NVRs and DeepinMind servers.
2. Support configuring parameters for a human body recognition task, including the task schedule template, device for analysis / camera, and detection area.
3. Support displaying human body recognition tasks in a list, the displayed information of a task includes its task name, task schedule template, device for analysis, and camera.

Human-Body-Based Monitoring

1. Support displaying human body pictures captured by a camera in nearly real time and viewing the live video streamed from the camera.
2. Support displaying the number of human body pictures captured on the current day in nearly real time.
3. Support monitoring human body recognition events in real time. If an event is detected, a window showing related picture(s) / video(s) will pop up on the Control Client.
4. Support displaying human body features in nearly real time, including smile or not, whether wearing glasses, whether wearing face masks, hair style, backpack, tops type, tops color, bottoms type, bottoms color, handbag, and whether riding a bike.

Body Data Storage

1. Support storing the captured human body pictures on the DeepinMind NVRs if the combination of network cameras and DeepinMind NVRs is used for human body recognition.
2. Support storing the captured human body pictures on the DeepinMind servers if the combination of network cameras and DeepinMind servers is used for human body recognition.

Event and Alarm

Support other face-related events detected by cameras, such as face capture and face detection.

Record Search

1. Support searching human body detection events by channel, and human body features (whether wearing glasses, tops type, tops color, bottoms type, bottoms color, whether wearing a backpack, whether lifting something, whether riding a bike).
2. Support searching human body pictures by picture; the search conditions include event, camera, and captured picture.

4.9.4 Archive Management

Task Management

1. Support configuring archive analysis tasks for DeepinMind servers.
2. Support configuring parameters for an archive analysis task, including the task schedule template, device for analysis / camera, face comparison group, and similarity.
3. Support displaying archive analysis tasks in a list and filtering these tasks by task name, task schedule template, device for analysis, and camera.

Archive Search

1. Support uploading a face picture to verify whether the person is a stranger.
2. Support uploading a face picture to verify if the person belongs to the specified face comparison group.
3. Support exporting the matched records.

Identity Verification

1. Support uploading a face picture and comparing it with face pictures in the face comparison groups to verify the person's identity.
2. Support uploading a face picture and specifying the person information (name or ID) to search for the person's identity.
3. Support exporting the matched records.

4.9.5 Vehicle Recognition

Task Management

1. Support configuring vehicle recognition tasks for DeepinMind servers.
2. Support configuring parameters for a vehicle recognition task, including task schedule template, device for analysis / camera, face comparison group, and similarity.
3. Support displaying vehicle recognition tasks in a list and filtering the tasks by task name, task schedule template, device for analysis, and camera.

Vehicle List Management

Same as the vehicle list management features in the Entrance and Exit module.

Vehicle Data Storage

1. Support storing the vehicle recognition pictures on the platform or storage server if vehicle recognition cameras alone are used for vehicle recognition.
2. Support storing the vehicle recognition pictures and captured vehicle pictures on the DeepinMind NVRs if the combination of network cameras and DeepinMind NVRs is used for vehicle recognition; Support searching passing vehicle records on the platform.
3. Support storing the vehicle recognition pictures and captured vehicle pictures on the DeepinMind servers if the combination of network cameras and DeepinMind servers is used for vehicle recognition.

Event and Alarm

Same as the event and alarm features of the Entrance and Exit module.

Vehicle Monitoring

1. Support displaying the captured vehicle pictures in nearly real time and viewing the live video streamed from the cameras that capture these pictures.
2. Support displaying features of passing vehicles in nearly real time, including vehicle type, vehicle color, and vehicle brand.
3. Support monitoring vehicle detection events in real time, including vehicle-matched event and strange vehicle event. Once the system detects one of these events, a window showing related picture(s) and video(s) will pop up on the Control Client.
4. Support displaying the number of passing vehicles on the current day.

Record Search

Support searching passing vehicles by time, source, mark, country and region, license plate No., vehicle type, vehicle brand, vehicle color, driving direction, vehicle list, and customized conditions.

4.9.6 Intelligent Arming

1. Support applying face picture libraries to multiple devices for person arming.
2. Support applying license plate numbers to multiple devices for vehicle arming.

4.9.7 Record Storage

Support setting the retention period of facial recognition and vehicle recognition records: 1/2/3/4/5/6/7/15 day(s), 1/2/3/6 month(s), or 1/2/3 year(s).

4.10 Alarm Detection

- ***Resource Management***
- ***Alarm Detection Management***

- ***Security Radar Management***
- ***Panic Alarm Management***
- ***Video Monitoring***
- ***Map Application***
- ***Alarm Application***
- ***Resource Maintenance***
- ***Device Log Search***
- ***Tool***

4.10.1 Resource Management

Device and Server

1. The platform shall support adding security control panels, security radars, and panic alarm devices by IP address, IP segment, port segment, Hik-Connect DDNS, or batch importing these devices into the platform for management:
   a. For security control panels, the platform shall support adding them via the Hikvision Private Protocol, Hikvision ISUP Protocol, and Hik-Connect Protocol;
   b. For security radars, the platform shall support adding them via the Hikvision Private Protocol;
   c. For panic alarm devices, the platform shall support adding them via the Hikvision Private Protocol and Hikvision ISUP Protocol.
2. The platform shall support searching for online devices, and adding them to the device list after activation.
3. The platform shall support configuring devices remotely.

Area

1. The platform shall support adding cameras to areas for management.
2. The platform shall support adding alarm inputs to areas for management, displaying the status of alarm inputs (bypass status, fault status, alarm status, battery status, arming status, detector connection status, online/offline status), bypassing alarm inputs, and recovering the bypassed alarm inputs.
3. The platform shall support adding alarm outputs to areas for management.
4. The platform shall support adding security radars to areas for management, arming/disarming them, and displaying their online/offline status.

4.10.2 Alarm Detection Management

Security Control Partition (Area) Management

1. The platform shall support importing partitions (areas) from devices and managing them.
2. The platform shall support displaying the basic information about the partitions (areas) and the information about the status of their related zones.
3. Some new-version wireless security control panels shall support linking a zone with multiple partitions (areas).

Detector Management

The platform shall support relating detectors to resources and displaying them on the map.

Security Control Partition (Area) Operation

1. The platform shall support performing the following operations on partitions (areas): disarming, away arming & stay arming (supported by the EN series security control panels), instant arming, and clearing alarms.
2. The platform shall support configuring arming/disarming schedules of partitions (areas).

Zone Operation

1. The platform shall support bypassing zones and recovering the bypassed zones.
2. The platform shall supports arming/disarming a single zone.

Status Notification

The platform shall support receiving the changes in the status of partitions (areas) and zones from devices, and updating the status information in real time.

Event Notification

The platform shall support pushing the events that triggered in partitions (areas) and zones to related devices to trigger linkage actions, such as triggering alarms in related alarm devices.

4.10.3 Security Radar Management

Security Radar Configuration

1. The platform shall support linking cameras to a security radar and viewing the live view of the cameras on the Control Client.
2. The platform shall support calibrating security radars' related cameras (the accuracy of calibration will effect the smart linkage).
3. The platform shall support enabling the security radars to monitor objects' moving patterns via related calibrated cameras.
4. The platform shall support drawing zones in a radar's detection area and managing them.
5. The platform shall support drawing trigger lines in a radar's detection area and managing them.

Security Radar Operation

The platform shall support arming and disarming radars.

Status Notification

The platform shall support receiving the changes in radars' arming/disarming status and online/offline status from devices, and updating the status information in real time.

Event Notification

The platform shall support receiving the alarms triggered in a radar's zones and trigger lines, and viewing the alarm information in other modules.

Moving Pattern

1. The platform shall support receiving the real-time moving pattern of the object from the security radar and displaying it on the map.
2. The platform shall support searching for the historical moving pattern of a radar. Currently, the historical moving pattern can only be displayed in the Alarm Center. When an alarm is triggered in a radar's zones and trigger lines, the platform will search for the historical moving pattern recorded 5 seconds before and after the triggering time and display it in the Alarm Center.
3. The platform shall support pushing the real-time moving pattern of an object and displaying the pattern on the map.

Smart Linkage

The platform shall support viewing the moving pattern of an object and the live view of cameras related to the security radar.

4.10.4 Panic Alarm Management

Event Notification

The platform shall support receiving panic alarms, and viewing the alarm information in other modules.

Video Intercom Control

The platform shall support two-way audio between the Control Client and devices via video intercom devices.

Device Adding via ISUP Protocol

The platform shall support adding panic alarms devices to the platform via the ISUP protocol.

Solar Panic Alarm Device

The platform shall support adding solar panic alarm devices.

4.10.5 Video Monitoring

Live View

1. The platform shall support live view of the cameras related to alarm devices.
2. The platform shall support live view of the cameras related to security radars.

Playback

The platform shall support playback of the cameras related to alarm devices. The video files can be stored in CVR, cloud storage server, and pStor.

4.10.6 Map Application

Security Control Partition (Area) Application

1. The platform shall support adding partitions (areas) to the map.
2. The platform shall support performing the following operations on partitions (areas) on the map: disarming, away arming & stay arming (supported by the EN series security control panels), instant arming, and clearing alarms.
3. The platform shall support arming/disarming partitions (areas) and displaying their alarm status on the map (the status information will be updated in real time according to the notifications of status change).

Alarm Input Application

1. The platform shall support adding alarm inputs with their related detectors to the map.
2. The platform shall support bypassing alarm inputs and recovering the bypassed alarm inputs.
3. The platform shall support displaying the status information (bypass status, alarm status, etc.) of alarm inputs on the map (the status information will be updated in real time according to the notifications of status change).

Security Radar Application

1. The platform shall support adding security radars to the map.
2. The platform shall support arming and disarming radars on the map.
3. The platform shall support displaying the pattern of the object detected by a security radar on the map.
4. The platform shall support displaying radars' arming status on the map.
5. The platform shall support playing the live videos streamed from the cameras related to a radar.

4.10.7 Alarm Application

Alarm Operation on Alarm Device

The platform shall support event and alarm configuration for alarm devices, displaying alarm notifications, and searching for history alarms.

Alarm Operation on Alarm Input

The platform shall support event and alarm configuration for alarm inputs, displaying alarm notifications, and searching for history alarms.

Alarm Operation on Partition (Area)

The platform shall support configuring events and alarms for partitions (areas), displaying alarm notifications, and searching for history alarms.

Alarm Operation on Security Radar

The platform shall support event and alarm configuration for radars' zones and trigger lines, displaying alarm notifications, and searching for history alarms.

Arming Control

1. The platform shall support displaying the event and alarm configuration for cameras, alarm inputs, and radars.
2. The platform shall support performing the following operations on partitions (areas): disarming, away arming & stay arming (supported by the EN series security control panels), instant arming, and clearing alarms.
3. The platform shall support bypassing the alarm inputs added to partitions (areas).
4. The platform shall support arming and disarming radars.

4.10.8 Resource Maintenance

Alarm Input

1. The platform shall support the viewing the status information of alarm inputs (network status, arming status, bypass status, fault status, alarms status, detector connection status, and battery status) and the inspection time.
2. The platform shall support refreshing the status of alarm inputs manually or by schedule.
3. The platform shall support exporting the status statistics of alarm inputs to the local PC.
4. The platform shall support viewing the detailed information about alarm inputs.
5. The platform shall support viewing the status of alarm inputs by device type.

Alarm Device

1. The platform shall support viewing the status information (network status, power status, arming/disarming status) and inspection time of alarm devices.
2. The platform shall support refreshing the status of alarm devices manually or by schedule.

3. The platform shall support exporting the status statistics of alarm devices to the local PC.
4. The platform shall support viewing the detailed information about the alarm devices.

4.10.9 Device Log Search

1. The platform shall support searching for the logs stored in alarm devices.
2. The platform shall support exporting the logs stored in alarm devices to the local PC.

4.10.10 Tool

Alarm Output Control

The platform shall support controlling the siren, alarm lamp, electric lock, and common alarm output of alarm outputs.

Broadcasting

The platform shall support broadcasting via panic alarm stations.

4.11 AR Monitoring

- ***AR Management***
- ***Scene Operation***
- ***Event and Alarm***
- ***Tag Management***

4.11.1 AR Management

Support AR scene management:

1. Support managing scenes, including linking AR cameras with scenes and configuring the geographic location of a scene by adding it to a map.
2. Support managing multiple scenes.
3. Support calibrating the AR PanoVu series cameras and speed domes.

4.11.2 Scene Operation

Scene Selection

1. Support selecting scenes via the scene list or by name search.
2. Support selecting scenes based on their locations on the map.
3. Support configuring auto-switch plans to switch scenes automatically by the set time interval (10 sec, 20 sec, 40 sec, 1 min, 3 min, 5 min, or a custom time interval).

AR Camera Management

1. Support capturing pictures by AR cameras.
2. Support recording videos by AR cameras.
3. Support 3D positioning of AR cameras.
4. Support PTZ control of AR cameras.
5. Support playing back videos by AR cameras.
6. Support panoramic target tracking (if the scene is linked with a speed dome).
7. Support calling the presets of a speed dome.

4.11.3 Event and Alarm

Alarm Monitoring

1. The platform shall support displaying the 5 most recent unhandled alarms in a list and filtering these alarms by type.
2. The platform shall support displaying the alarms of all tags added to the scene.
3. The platform shall support the following alarm types: VCA events, face detection events, vehicle detection events, thermal imaging events, and camera maintenance events.
4. The platform shall support viewing alarm information and handling alarms the same way as supported in the alarm center.

Event Detection

1. The platform shall support the detection of face matching events.
2. The platform shall support the detection of vehicle matching events.

4.11.4 Tag Management

Tag Adding

1. Support adding multiple folders to manage favorited tags.
2. Support adding tags to the panoramic image and adding the added tags to your favorites.

Camera Tag

1. Support performing basic operations such as live view and playback for camera tags.
2. Support operations such as ignoring alarms, viewing history alarms, and performing arming controls.
3. Support dynamically switching camera tags of a speed dome as the camera zooms in/out or rotates.

Scene Tag

1. Support adding scene tags.
2. Support switching to the scene specified by a tag. The operations supported after the scene switch shall remain the same.

Map Tag

1. Support adding map tags.
2. Support opening the map preview, viewing map details, and performing other basic map operations.

Access Control Tag

1. The platform shall support subscribing to the events and alarms of the access control tags and view the related details.
2. The platform shall support viewing the basic information of the access control points and the last 10 alarms and access control events. The platform shall support viewing door status and control doors. The platform shall support subscribing to and view door access control events.
3. The platform shall support viewing access control events in the real-time alarm center and the event list.

Alarm Resource Tag

1. The platform shall support displaying alarms from partitions (areas) and zones linked to partitions (areas).
2. The platform shall support displaying partition (area) basic information, arming status in tag details. Arm, disarm, away arm, stay arm, and silence alarms.
3. The platform shall support viewing zone lists and zone status in tag details. The platform shall support arming, disarming, and bypassing a zone.

Radar Tag

1. The platform shall support displaying alarms from radars, alarm status, and real-time events.
2. The platform shall support displaying information including radar information and linked cameras. The platform shall support arming and disarming a radar.
3. The platform shall support displaying partition (area), zone, and alarms from radars in the real-time alarm list.

Entrance & Exit Tag

1. The platform shall support subscribing to access control records to display related records.
2. The platform shall support viewing records of an entrance & exit. The platform shall support viewing entrance & exit information, linked videos (captures), vehicle passing events, and alarms in tag details.

Network Speaker Tag

1. The platform shall support displaying alarms from network speakers.
2. The platform shall support displaying alarm status, live view image, and resource information in tag details.
3. The platform shall support starting broadcast and two-way audio.

Tag Search

1. Support searching for tags by name or tag type (camera, scene, and map).
2. Support filtering favorited tags by folder.

4.12 Map Management

4.12.1 Map Settings

1. The platform shall support adding Google map.
2. The platform shall support adding Google satellite map.
3. The platform shall support adding E-maps.

4.12.2 Resource Management

1. The platform shall support adding, deleting, editing, and searching for hot spots.
2. The platform shall support adding, deleting, editing, and searching for cameras.
3. The platform shall support adding, deleting, editing, and searching for parking lots.
4. The platform shall support adding, deleting, editing, and searching for alarm devices.
5. The platform shall support adding, deleting, editing, and searching for remote sites.
6. The platform shall support adding zones.
7. The platform shall support adding, deleting, editing, and searching for alarm inputs.
8. The platform shall support adding, deleting, editing, and searching for alarm outputs.
9. The platform shall support adding, deleting, editing, and searching for access control deices. Customize access control device icons.
10. The platform shall support adding, deleting, editing, and searching for audio devices.
11. The platform shall support adding, deleting, and editing geographic areas. The platform shall support adding resources to geographic areas.
12. The platform shall support adding, deleting, editing, and searching for third-party resources.
13. The platform shall support adding multi-door interlocking groups to maps.

14. The platform shall support adding anti-passback groups to maps.
15. The platform shall support adding entry & exit counting groups to maps.
16. The platform shall support adding combined alarms to maps.

4.12.3 Resource Operations

Alarm Management

1. The platform shall support acknowledging alarms of resources added to maps and viewing alarm details.
2. The platform shall support viewing occupation rates of the parking spaces and parking duration information.
3. The platform shall support ignoring alarms on a map.

Geographic Area

1. The area will flash if any of the resources within a geographic area reports an alarm.
2. The platform shall support batch ignoring all alarms within a geographic area.
3. The platform shall support controlling strobe light alarms within a geographic area.
4. The platform shall support batch broadcasting of the resources within a geographic area.

Camera

1. The platform shall support starting live view and playback of a camera.
2. The platform shall support displaying vehicle passing records of ANPR cameras.
3. The platform shall support batch selecting cameras and starting live view (Control Client).
4. The platform shall support controlling FoV cameras: the view angle and view of field shall change as the camera changes its angle.
5. The platform shall support batch controlling strobe light alarms.
6. The platform shall support batch controlling audio alarms.

Hot Region

1. The platform shall support clicking a hot region to view another map.

Intelligent Analysis

1. The platform shall support people counting groups: The platform shall support viewing the real-time number of people entered, exited the region, or stayed in the region.
2. The platform shall support adding pathway analysis groups: the platform shall support viewing the real-time number of people walking by in the Monitoring module on the Control Client.

Speaker

1. The platform shall support starting broadcasting and playing audios.

Portable Devices

1. The platform shall support locating devices on a map. The platform shall support starting live view, playback, and two-way audio.

Access Control

1. The platform shall support pathway analysis groups: The platform shall support viewing the real-time number of people walking by in the Monitoring module on the Control Client.
2. The platform shall support entry & exit counting groups: The platform shall support viewing the real-time number of people entered, exited the region, or stayed in the region in the Monitoring module on the Control Client.
3. The platform shall support anti-passback groups: When an anti-passback alarm is triggered by the doors in the group, the region of the group shall be highlighted on the map.
4. The platform shall support multi-door interlocking groups: When multi-door interlocking alarm is triggered by the doors in the group, the region of the group shall be highlighted on the map.
5. The platform shall support checking access control records, recognition exceptions, etc. of the current day.

4.12.4 General Operations

1. The platform shall support zooming in and out maps.
2. The platform shall support capturing maps and printing maps.
3. The platform shall support adding, deleting, editing, and searching for tags. The platform shall support customizing tags.
4. The platform shall support filtering by resource types on maps.
5. The platform shall support displaying/hiding resource names on maps.
6. The platform shall support displaying/hiding FoV effects.
7. The platform shall support enabling/disabling 3D mode.

4.12.5 Statistics

The platform shall support displaying data about access control, alarm, maintenance, and intelligent analysis.

4.13 Event and Alarm

- ***Triggering Event***
- ***Event Receiving***
- ***Alarm Linkage***
- ***Combined Alarm***
- ***Configuration and Management***
- ***Real-Time Alarm Display***

- ***Alarm Operation***
- ***Search and Exporting***
- ***Statistics and Analysis***
- ***Permission Management***

4.13.1 Triggering Event

Classification

1. The triggering events shall be classified by modules, including video, access control, vehicle, alarm, intelligent analysis group, digital signage, maintenance, user, user-defined event, generic event, visitor, broadcast, and security inspection.
2. The Edit Alarm page shall provide the icon for remote configuration of the triggering source. Users shall be able to click the icon to open the remote configuration page of the device or server.

Generic Event

1. The platform shall support setting the transport type as TCP, UDP, HTTP, or HTTPS.
2. The platform shall support setting the match type as Search by Expression, Match by Expression, or Search by Keyword, and specifying keywords of the data source, title, and description.
3. The platform shall support selecting AND or OR as the expression.
4. The platform shall support batch importing generic events.
5. The platform shall support monitoring generic events via map.

User-Defined Event

The platform shall support setting self-defined event if the system-monitored events or the generic event cannot meet the users' need.

4.13.2 Event Receiving

Event Receiving Schedule

1. The platform shall support setting self-defined event if the system-monitored events or the generic event cannot meet the users' need.
2. The platform shall support setting receiving schedule template of events, including All-Day, Weekday, and Holiday template. Users can select the templates defined by the platform or customize a template.
3. The Add Event and Alarm page shall support enabling the function of ignoring recurred events or alarms, and users can configure the duration for ignoring.
4. The platform shall support configuring alarm recipient groups: After adding users to the alarm recipient group, the users in the group will receive notifications once alarms are triggered without setting recipients for each alarm.

5. The platform shall support batch adding users as alarm recipients.
6. The platform shall support selecting alarm recipients or alarm recipient group for each alarm.
7. The platform shall support configuring both triggering event and alarm for a source.
8. The platform shall support configuring one or multiple holidays for an alarm receiving schedule template.

4.13.3 Alarm Linkage

Linkage Actions

1. The platform shall support configuring the colors for events.
2. The platform shall support adding color templates for further reuse.
3. The platform shall support setting Capture Picture as the linkage action: set the duration of capture picture before or after the event occurs.
4. The platform shall support setting Trigger Record as the linkage action: start recording before the event happens and continuing recording after the event happens, lock the recorded videos and setting the duration of locking.
5. The platform shall support setting Trigger PTZ as the linkage action: select calling the preset, patrol, or pattern of the linked PTZ camera.
6. The platform shall support setting Create Tag as the linkage action. Select the cameras to record video when the event or alarm occurs and set the storage location for storing the video files. The system will add a tag to the triggered video footage for convenient search. Set the time range to define the tagged length of the video footage.
7. The platform shall support setting Link Access Point as the linkage action: link all access points or specified access points.
8. The platform shall support setting Link Alarm Input as the linkage action. Select alarm inputs and these alarm inputs will be armed or disarmed when the alarm occurs.
9. The platform shall support setting Link Alarm Output as the linkage action. Select different ways for closing the alarm output when the alarm output works, set the linkage status to On or Off, and set to close the alarm output automatically or manually.
10. The platform shall support setting Link Third-Party Integrated Resource as the linkage action. Select the control about details operations that will happen when the alarm occurs.
11. The platform shall support setting Send Email as the linkage action. Select an email template to send the alarm information according to the defined email settings.
12. The platform shall support setting Link Printer as the linkage action. If the source type is alarm input, users can link to print entry & exit counting report of certain entry & exit counting group.
13. The platform shall support setting Link Speak Unit as the linkage action. After linking speaker units to an event or alarm and selecting an audio file to be played, the selected audio file will be played by the selected speaker units when the event or alarm is triggered.
14. The platform shall support setting Link Alarm Partition (Area) as the linkage action. You can arm or disarm the partitions (areas) when alarms occur.
15. The platform shall support triggering a user-defined event.

16. The platform shall support setting Trigger Remaining Open for Entrance and Exit as the linkage action. When the event or alarm is triggered, the selected entrance(s) and exit(s) will turn to the status of remaining open so that the vehicles can enter or exit the parking lot without authentication or the allowance of guards.
17. The platform shall support setting Send HTTP Request as the linkage action to send HTTP requests to the third-party platform.

Real-Time Alarm Management

1. The pop-up window of alarms shall support editing the priority of the alarm. By default, three priorities are provided: high, medium, and low.
2. The pop-up window of alarms shall support editing the type of the alarm. By default, four types are provided: true, false, to be acknowledged, and to be verified.
3. The Web Client shall support setting whether an event can be triggered as an alarm. When setting this, users can select the recipients of the alarm and set alarm priority.
4. The Web Client shall support setting the Restrict Alarm Handling Time for the alarm. The linked alarm output or user-defined events shall be triggered after the configured duration.
5. The Web Client shall support enabling the following functions for an alarm: pop-up window, displaying alarm-related video on smart wall, relating an alarm to a map, and triggering audible warning.
6. When users set recording as the linkage action, the platform shall support selecting displaying recorded video or live view when alarm occurred.
7. The platform shall support acknowledging alarms by the platform automatically. When the delayed duration ends, the alarm will be acknowledged automatically.
8. The platform shall support displaying multiple unhandled alarms and the number of total unhandled alarms in one pop-up alarm window on the Control Client.

4.13.4 Combined Alarm

Rule Configuration

1. The platform shall support linking a combined alarm with an alarm triggered area, which is used for counting the alarms triggered in the area.
2. The platform shall support enabling the function of ignoring recurring alarms, and users can configure the duration for ignoring.
3. The platform shall support setting any triggering source types.
4. The platform shall support four alarm triggering logic, and support configuring the triggering interval between two alarms.
5. The platform shall support enabling or disabling alarms. When disabling an alarm, users can set the start time and duration of disabling. Once an alarm is disabled, users will not receive the alarm notifications.
6. Combined alarm shall support all linkage actions except Link Printer.

Combined Alarm Display

1. The platform shall support adding a combined alarm to the map.
2. The platform shall support copying the settings of a combined alarm to other combined alarms.
3. The platform shall support testing a combined alarm.

4.13.5 Configuration and Management

1. When adding an event, the platform shall support selecting multiple triggering events and sources.
2. The platform shall support deleting all invalid events quickly by clicking the Delete All Invalid Items button.
3. The platform shall support setting multiple events as alarms in a batch.
4. The platform shall support enabling and disabling multiple alarms in a batch.
5. The platform shall support testing alarms.
6. The platform shall support filtering events that are set as alarms.
7. The platform shall support filtering events and alarms by source type, event & alarm name, area, source, and triggering event.
8. The platform shall support highlighting abnormal events and alarms with a red exclamation mark.
9. The platform shall support highlighting events and alarms that are not supported by the sources.
10. The platform shall support event and alarm statistics.
11. The platform shall support classifying events and alarms by modules.

4.13.6 Real-Time Alarm Display

Alarm Report

1. After launching the Control Client, the user shall be able to receive the latest 500 unacknowledged alarms.
2. The platform shall support numbers of all alarms on the platform, including shielded alarms, disabled alarms, alarm inputs, zones, and security radars.
3. The user shall be able to display shielded alarms only.
4. The user shall be able to display alarms that are displayed on the smart wall only.
5. The platform shall support displaying alarm sources, alarm types, and the triggering times of each alarm. The platform shall support expanding an alarm type to display all the alarm list.

Alarm Center

1. The platform shall support selecting different layout of the Alarm Center of the Control Client, namely Related Video & Picture, Map, and both of them.
2. The platform shall support displaying alarm-related map, video and picture on an auxiliary screen.
3. The platform shall support selecting the items displayed in the alarm list, such as marking status, priority, number, source, area, triggering event.
4. The platform shall support customizing icons displayed in the Operation column of the Alarm Center.
5. The platform shall support selecting video or picture as the default displayed content in the alarm information. Picture is recommended for low bandwidth.
6. The platform shall support selecting the default stream type for linkage video in the pop-up window.
7. The platform shall support triggering the pop-up window of alarm.
8. The platform shall support enabling audible warning for an alarm.
9. The platform shall support configuring alarm sound for alarms with different priority.
10. The platform shall support configuring the times of playing the alarm sound.
11. The platform shall support filtering real-time alarm list by priority, marking status, and alarming status.
12. The platform shall support disabling the voice prompt after acknowledging certain alarms.
13. The platform shall support setting low priority alarms with no alarm sound.
14. The platform shall support batch acknowledging all alarms. No more than 2,000 alarms can be acknowledged at one time.
15. The platform shall support tiling alarms by time and aggregating alarm by name in the Alarm Center of the Control Client.
16. The platform shall support adding a category for customizing the filter conditions based on your needs in Alarm Center.

Map

The user shall be able to view an alarm on the map, view alarm details on the map, and acknowledge an alarm on the map.

4.13.7 Alarm Operation

1. The platform shall support displaying alarm details, including related map, video, picture, description, operation logs. For different event types, the details vary.
2. The Overview page shall support selecting an event or alarm and switch to the Event & Alarm Search page to search for its history events/alarms.
3. The platform shall support playing live and recorded videos of alarms on the Control Client, and support dragging the time bar and turning on/off the audio when playing the recorded video.
4. The alarm-related video window shall support two-way audio between the people on-site and the user of the platform.

5. The alarm-related video window shall support PTZ control.
6. The platform shall support displaying alarm-related videos on the smart wall.
7. The platform shall support downloading information of an alarm, including alarm details, picture, video, and map.
8. The platform shall support shielding an alarm.
9. The platform shall support acknowledging an alarm or batch acknowledging. Once acknowledged, the alarms will be removed from the Overview page.
10. The platform shall support editing acknowledged alarm as unacknowledged.
11. The platform shall support marking alarms for highlighting.
12. The platform shall support disabling alarms. After disabling, the user will not receive the alarm when it is triggered.
13. The platform shall support enabling alarms after disabling.
14. The platform shall support bypassing or restoring bypassed alarm inputs.
15. The platform shall support arming and disarming partitions (areas), alarm inputs, and security radars.
16. The platform shall support manually triggering user-defined event
17. The alarm pop-up window shall support sending emails containing alarm information after selecting the recipients & email template and entering the description.
18. The platform shall support forwarding an alarm to specified users.

4.13.8 Search and Exporting

Event & Alarm Search

1. The platform shall support searching for events by time, area, event type, and event name.
2. The platform shall support searching for alarms by triggering time, marking status, priority, alarm type, acknowledging status, area, event type, and alarm name.
3. The platform shall support searching for both events and alarms by the same conditions.
4. After searching for the events and alarms, the platform shall support viewing event & alarm details and operation logs.

Alarm Operations

1. The operation logs of an alarm shall contain all the operations on the alarm, including records of forwarding, shielding, receiving, marking, disabling, and the user information related to the operations.
2. The platform shall support displaying the linked map on the alarm pop-up window and alarm details page. The map shall support displaying alarm sources, resources around the alarm resources, and the related area coverage. The platform shall support batch ignoring alarms, starting two-way audio, and enabling the audio.
3. The platform shall support opening the map window via the alarm pop-up window and alarm details page. The platform shall support displaying the linked map and perform related operations via the map.

Export Events & Alarms

1. After searching for the events and alarms, the platform shall support exporting the searching results to the PC as a CSV/PDF file. The platform shall support up to 5,000 pieces of information. The platform shall support exporting related pictures of no more than 500.
2. The platform shall support exporting the matched or mismatched alarms with detailed information, such as person information, card number, license plate number, and so on.

4.13.9 Statistics and Analysis

Alarm Overview

The platform shall support counting alarms of the current day, including alarms that are acknowledged and unacknowledged.

Alarm Trend

1. The platform shall support counting alarms triggered in the last 7 and 30 days.
2. The platform shall support generating trend map of specified event types.
3. The platform shall support generating and exporting trend map of alarms of 7 days in PDF, PNG, and JPG format.

Top 5 Alarm Analysis

1. The platform shall support displaying the top 5 events and alarms triggered today or during the last 7 and 30 days.
2. The platform shall support displaying the top 5 areas of all the triggered events and alarms of today, the last 7 and 30 days.
3. The platform shall support counting specified event types and generating the top 5 event types.
4. The platform shall support exporting the events in PDF, PNG, or JPG format.

Scheduled Report of Events & Alarms

1. The platform shall support sending event and alarm reports via emails regularly.
2. The platform shall support sending daily reports containing information about alarms and events triggered on the day before the current day.
3. The platform shall support sending weekly reports containing information about alarms and events triggered during the last 7 or 14 days.
4. The platform shall support setting the date and time of sending event/alarm reports.
5. The platform shall support generating alarm reports in Excel or PDF format.
6. The platform shall support generating alarm reports in multiple languages.
7. The platform shall support backing up event and alarm reports to the SFTP server regularly.
8. The platform shall support backing up event and alarm reports to the SYS regularly.

4.13.10 Permission Management

Event and Alarm Receiving Permission

The platform shall support selecting recipients of an alarm. The users with the permission for receiving alarms can receive the alarm information.

Event and Alarm Operation Permission

1. The platform shall support assigning user permission of arming or disarming alarm input.
2. The platform shall support assigning user permission of bypassing or recovering bypassed alarm input of security control device.
3. The platform shall support assigning user permission of acknowledging alarm.
4. The platform shall support assigning user permission of batch acknowledging alarms.
5. The platform shall support assigning user permission of acknowledging alarm without entering remarks.
6. The platform shall support assigning user permission of forwarding alarms.
7. The platform shall support assigning user permission of marking acknowledge alarm as unacknowledged.

Event and Alarm Search Permission

The platform shall support assigning user permission of event & alarm search.

4.14 Evidence Management

Deployment and Access

1. The platform shall support setting the HCP server as the evidence management server.
2. The platform shall support setting the SFTP server to evidence management server.
3. The platform shall support multiple Clients input of evidence management information: Mobile Client, Web Client, and Control Client.
4. The platform shall support managing Secure File Transfer Protocol (SFTP) server (address/user name/password).

File Source

1. The platform shall support uploading local files and specifying the file tag and description.
2. The platform shall support saving the files in Live View, Playback, Video Search and local PC to the Evidence Management Center.
3. The platform shall support saving the files in Alarm Center and Event and Alarm Search to the Evidence Management Center.
4. The platform shall support saving the files (videos, real-time events, ANPR information, driving events, vehicle track, routes) in the On-Board Monitoring module to the Evidence Management Center.

5. The platform shall support saving the files in the Person Search Module, which generated from pages including Search Face Picture, Search Human Body Picture, Search Matched Faces, Search Person by Frequency, Search Archive, and Identity Verification, to the Evidence Management Center.
6. The platform shall support saving the entry & exit counting files on the Access Control Retrieval page to the Evidence Management Center.
7. The platform shall support saving the event records on the Patrol Search page to the Evidence Management Center.
8. The platform shall support saving the files in the Parking Lot module, which generated from pages including Passing Vehicle Search in Entrance & Exit, Payment Records, Parked Vehicle Search, Parking Records, and Multiple Vehicles Under One Account Status to the Evidence Management Center.
9. The platform shall support saving the screen recording files and downloaded files in the Download/Task Center to the Evidence Management Center.
10. The platform shall support uploading evidence from the related camera: select the camera, the evidence file will be uploaded from the camera at specified time or uploaded when Wi-Fi is connected.
11. The platform shall support setting the uploading start time/uploading end time/recording start time/recording end time.
12. The platform shall support multiple evidence files: pictures, videos, audios, and others (files in the format of Excel, CSV, PDF, etc.).

File Search

1. The platform shall support searching for files by file name, uploader, or description.
2. The platform shall support searching for files by file type, including video, audio, picture, and other.
3. The platform shall support searching for files by file tag.
4. The platform shall support searching for files by file start and end time.
5. The platform shall support searching for files by uploading time.
6. The platform shall support saving file search conditions for the next time search.

File Management

1. The platform shall support editing the file name and viewing the file size/source.
2. The platform shall support editing the file tag.
3. The platform shall support checking the file integrity by comparing the integrity verification value of the platform and that of the exported file.
4. The platform shall support exporting and deleting files.
5. The platform shall support viewing the upload/download records of files.
6. The platform shall support controlling the permission of files linked to cases by person. Only file owners, supervisors of file owners, and shared file recipients shall be able to view the file.
7. The platform shall support sharing files.

8. The platform shall support adding a watermark to videos, pictures, and files for data privacy protection.
9. The platform shall support linking file(s) to case(s).

Case Management

1. The platform shall support searching for cases by case name/ID/description.
2. The platform shall support searching for cases by case type.
3. The platform shall support searching for cases by case status.
4. The platform shall support searching for cases by creation time.
5. The platform shall support searching for cases by case start/end time.
6. The platform shall support exporting and deleting cases.
7. The platform shall supports editing the case name, case ID, CAD ID, case type, case status, case start/end time, and case description.
8. The platform shall support linking a case with multiple files.
9. The platform shall support controlling the case permission by person. Only case owners, supervisors of case owners, and shared case recipients shall be able to view the case.
10. The platform shall support editing video files of cases by clipping, adding mosaic, adding text, turning sound on/off. This function shall only be available when the Evidence Collection license is enabled.
11. The platform shall support checking the integrity of a case file by comparing the integrity verification value of the platform and that of the exported file. This function shall only be available when evidence management license is added.
12. The platform shall support downloading case reports.
13. The platform shall support sharing cases.
14. The platform shall support opening or closing the cases.

Evidence Map

The user shall be able to search for and manage files/cases on Google Maps.

4.15 Access Control

- ***Application Wizard***
- ***Access Control Device Management***
- ***Resource Management in Multiple Areas***
- ***Card Printing***
- ***Access Level Management***
- ***Advanced Function Management***
- ***Real-Time Monitoring***
- ***Effective Emergency Response***
- ***Access Records***
- ***Visualized Report***
- ***Privacy Protection Settings***

4.15.1 Application Wizard

Configuration wizard of access control which is on the right and will be displayed when you hover the cursor on it.

4.15.2 Access Control Device Management

Device Access via Multiple Protocols

1. Support accessing devices via Device Network SDK by IP address, IP segment, or batch importing.
2. Support accessing devices via ISUP by device ID, ID segment, or batch importing.
3. Device information list: device name, address, serial No., version No., number of doors, number of readers, network status, and password strength.
4. The platform shall support accessing devices via ISAPI by IP address, IP segment, or batch importing.

Device Configuration

1. Platform configuration (Device Network SDK): IP address, port, alias, user name, password, time zone, and channel resource.
2. Platform configuration (ISUP): device ID, key, alias, storage configuration, time zone, and channel resource.
3. Support going to the web page of device configuration.
4. Support adding access control devices via domain name.
5. For devices that do not support configuration via web browser, it supports going to the remote configuration page.

Remote Device Control

1. Support editing passwords one by one or in a batch.
2. Time zone settings: Support configuring time zone one by one or in a batch; Support getting time zone settings from devices and applying time zone settings to devices.
3. Support restoring to default settings for devices one by one or in a batch.

Real-Time Device Status Monitoring

1. Support viewing online status.
2. Support viewing network status.
3. Support viewing main and sub lane controller status (only for turnstiles).
4. Support viewing turnstile component status (only for turnstiles).
5. Support viewing arming status.
6. Support viewing device tampering status.
7. Support viewing power supply status.
8. Support viewing first added time and inspection time.

Opening Door by Mobile Client

The platform shall support opening door via bluetooth.

4.15.3 Resource Management in Multiple Areas

Door Management

1. Basic information: door name, device, door magnetic sensor, exit button type, door open duration, extended open duration, door open timeout alarm, maximum door open duration, duress code, super password, and duress code. The actual parameters depend on the device capability.
2. The platform shall support linking to cameras: no more than two cameras can be linked to each door.
3. The platform shall support linking face recognition terminals to a barrier gate to control the access of persons.
4. The platform shall support linking face recognition terminals to an access controller to control the access of persons.
5. Picture storage: local storage, CVR, cloud storage, pStor, and Network Video Recorder (NVR). It is valid when camera(s) are linked and the picture storage is enabled.
6. Reader: enable or not, reader name, reader type, minimum card swiping interval, resetting entry settings, failed card attempts alarm, tampering detection, OK LED polarity, ERR LED polarity, buzzer polarity, and fingerprint security level. The actual parameters depend on the device capability.
7. Resource information list: door name, device IP address, device, network status, reader information, status of remaining open/closed, and area.
8. The platform shall support getting door names from the devices.
9. The platform shall support applying door names to devices.
10. The platform shall support setting the capture priority for linked cameras.

Floor Management

1. Basic information: elevator name, device, door open duration, extended open duration, door open timeout alarm, maximum door open duration, duress code, super password, and duress code. The actual parameters depend on the device capability.
2. Floor: No. and name. The platform shall support resetting floors in a batch.
3. The platform shall support linking to cameras: no more than two cameras can be linked to each door.
4. Picture storage: local storage, CVR, cloud storage, pStor, and Network Video Recorder (NVR). It is valid when camera(s) are linked and the picture storage is enabled.
5. Reader: enable or not, reader name, reader type, minimum card swiping interval, resetting entry settings, failed card attempts alarm, tampering detection, OK LED polarity, ERR LED polarity, buzzer polarity, and fingerprint security level. The actual parameters depend on the device capability.

6. Resource information list: elevator name, device IP address, device, network status, and area.
7. The platform shall support getting floor names from devices.
8. The platform shall support applying floor names to devices.
9. The platform shall support configuring relations between elevator control relays and floors on the remote configuration page.

Alarm Input Management

1. Basic information: alarm input name and device.
2. Resource information list: alarm input name, device IP address, device, partition No., area, and network status.

Alarm Output Management

1. Basic information: alarm output name.
2. Resource information list: alarm output name, device IP address, device, and area.

Resource Management by Area

1. The platform shall support adding multiple areas and each area contains multiple different resources.
2. The platform shall support multiple levels of areas.

4.15.4 Credential Management

Card Management

1. The platform shall support up to 20 digits for one card number.
2. The platform shall support adding up to five cards to a person.
3. The platform shall support entering the card number manually.
4. The platform shall support card enrollment stations reading card numbers.
5. When reading the card number via a card enrollment station, the platform shall support selecting card format.
6. The platform shall support encrypting card sectors (one sector for a time) only when the encryption is via the card enrollment station(communicating with the platform via USB).
7. The platform shall support enrollment station (communicating with the platform via network) reading card numbers (supported card types including EM, M1, ID, DESfire, FeliCa, and CPU).
8. The platform shall support enrollment station (communicating with the platform via USB) reading card numbers (supported card types including EM, M1, ID, DESfire, FeliCa, and CPU).
9. The platform shall support any card reader of remote access control devices reading card numbers .
10. Card types: common, duress, and dismiss.
11. The platform shall support issuing cards in a batch.
12. The platform shall support reporting card loss and canceling the card loss report.

Fingerprint Management

1. The platform shall support up to 10 fingerprints per person.
2. The platform shall support fingerprint enrollment devices enrolling fingerprints.
3. The platform shall support enrolling fingerprints via enrollment station(communicating with the platform via network).
4. The platform shall support enrolling fingerprints via enrollment station(communicating with the platform via USB).
5. The platform shall support any card reader of remote access control devices enrolling fingerprints.
6. Fingerprint types: common, duress, and dismiss.
7. The platform shall support fingerprint duplicate checking and fingerprint quality grading.

Face Picture Management

1. The platform shall support only one face picture per person.
2. The platform shall support uploading local face pictures.
3. The platform shall support using a USB camera or a laptop with a camera enrolling face pictures.
4. The platform shall support enrolling face pictures via enrollment station (communicating with the platform via network).
5. The platform shall support enrolling face pictures via enrollment station (communicating with the platform via USB).
6. The platform shall support collecting face pictures via remote access control devices.
7. The platform shall support exporting all face pictures of all added persons as a ZIP file and setting a password for decompressing the ZIP file.
8. The platform shall support deleting a facial credential or batch deleting facial credentials.
9. The platform shall support saving the unreadable modeling data of profile pictures to the platform, so that the real profile pictures will not be displayed on the platform.
10. The platform shall support testing profile picture quality by access control devices and video intercom devices.
11. The platform shall support testing profile picture quality by barrier gates linked with a MinMoe face recognition terminal.

Password Management

1. The platform shall support setting the password (unique, containing 4 to 8 digits, and only one password per person)
2. The platform shall support generating PIN code automatically.

Iris Management

1. The platform shall support collecting 2 irises for each person.
2. The platform shall support collecting irises by device remotely as person credentials and applying irises to devices.

Static QR Code

1. The platform shall support generating static QR code based on person card No.
2. The platform shall support viewing and downloading static QR codes to distribute the codes to employees.

Dynamic QR Code

1. The platform shall support selecting the QR code mode as static or dynamic.
2. The platform shall support configuring the validity period (1 min by default) of a dynamic QR code.
3. The platform shall support employees viewing the dynamic QR code (automatically refreshed on schedule) and manually refreshing the QR code after logging in to the Mobile Client.

4.15.5 Card Printing

Card Template Customization

1. Support customizing card templates: set the shape to vertical or horizontal, set the front and/or back style, insert pictures, insert text, and insert person information fields.
2. Support inserting cutting lines in card templates.
3. Support printing static QR codes of persons on cards.
4. Support previewing the card template.
5. Support text alignment and content alignment.
6. Support adjusting the layer of content and text on the card.
7. Support customizing the size of the text on the card and horizontal alignment.
8. Support customizing the size of pictures added to the card.
9. Support configuring font color and bold font.
10. Support auto line break of inserted text, name, first name, last name, email, remark, and custom information.

Compatible with Mainstream Card Printers

1. The platform shall support mainstream card printers, such as HID Fargo and Magicard; the supported card specification is CR80; Support single-sided or dual-sided printing.
2. The platform shall support Zebra ZC350 for printing cards.
3. The platform shall support accessing card printers via USB.

Quick Card Printing

Support printing cards one by one or in a batch.

4.15.6 Access Level Management

Dashboard

1. The platform shall support wizard, device health status, person credential status, access trend, abnormal records top 5, entry & exit counting, and real-time entry & exit events.
2. The platform shall support quickly configuring access control on the Access Control Overview page.

Holiday Management

The platform shall support configuring up to 32 regular or irregular holidays.

Access Schedule Template Management

1. The platform shall support three default access schedule templates: all-day template, weekday template, and weekend template. The default templates cannot be edited or deleted.
2. The platform shall support creating new access schedule templates or copying from an existing template. The templates include week schedules and holiday schedules.
3. The platform shall support manually entering the time accurate to hour and minute for drawing time periods of schedule templates.

Access Level Management

The platform shall support configuring access levels for all or specific access points.

Multi-Dimensional Access Level Assignment

1. The platform shall support assigning access levels by access level.
2. The platform shall support assigning access levels by person.
3. The platform shall support assigning access levels by organization.
4. The platform shall support assigning specific access levels by access group.
5. The platform shall support searching for persons by name and employee ID.
6. The platform shall support automatically applying access level settings to devices after assigning access levels to persons, departments, and access groups.

Manual Access Level Applying

1. The platform shall support specifying persons and devices to apply access levels immediately or later.
2. The platform shall support applying access levels initially (first clear and then apply).
3. The platform shall support displaying the applying progress and applying failure details.
4. The platform shall support status statistics of applying access levels.

Automatic Access Level Applying

1. The platform shall support automatically applying access levels at fixed time every day. The time can be configured and is 1:00 a.m. by default.
2. The platform shall support automatically applying access levels every certain hours every day. The interval can be configured and is 1 hour by default.

Quick Exception Processing

1. The platform shall support credential status statistics: number of persons, faces, cards, fingerprints, and persons with no credentials; The platform shall support viewing and exporting person statistics of different status.
2. The platform shall support device status statistics: device exception, to be applied, and exceptional when applying, and The platform shall support viewing and exporting device statistics of different status.
3. The platform shall support detecting access level applying status by specified person, including applying failed, applying succeeded, and to be applied; The platform shall support applying access levels again.
4. The platform shall support detecting access level applying by specified access point, including applying failed and applying succeeded; The platform shall support applying access levels again.

Access Level Overview

1. The platform shall provide the statistics of access level applying results, including total person number, number of persons with abnormal/abnormal access level, and number of persons with access level not applied.
2. The platform shall support viewing access level applying result of any person.
3. The platform shall support manually applying all person's access levels or manually performing initial application for any person.

4.15.7 Advanced Function Management

First Person In

1. The platform shall support remaining open with first card and first card authorization.
2. The platform shall support remaining open with first person and first person authorization.

Multi-Factor Authentication

1. The platform shall support adding multi-factor authentication groups.
2. The platform shall support configuring multi-factor authentication rule based on multi-factor authentication group, including access schedule template, authentication mode, card-swiping order of the authentication group, and card-swiping interval.
3. The platform shall support specifying users to open the door remotely.

Multi-Door Interlocking

The platform shall support multi-door interlocking of one device.

Anti-Passback

1. The platform shall support area anti-passback of one device or across multiple devices.
2. The platform shall support route anti-passback of one device or across multiple devices.

3. The platform shall support enabling or disabling regular forgiving anti-passback.
4. The platform shall support configuring anti-passback for barrier gates.

Platform-Controlled Anti-Passback

1. The platform shall support configuring platform-controlled area anti-passback of a single device or multiple devices.
2. The platform shall support configuring platform-controlled route anti-passback of a single device or multiple devices.
3. The platform shall support configuring the time of regularly forgiving platform-controlled anti-passback rules.
4. The platform shall support enabling/disabling platform-controlled anti-passback rule.

Remaining Open or Closed

The platform shall support configuring free access and access forbidden schedules in a batch.

Authentication Mode

1. The platform shall support configuring reader authentication modes.
2. The platform shall support configuring person private authentication modes.

Authentication Code

The platform shall support configuring up to 500 different authentication codes. Only DS-K260X access controller supports this function.

Open Door by Mobile Client

1. The platform shall support automatically opening door via Bluetooth.
2. The platform shall support opening door via bluetooth by rotating the smart phone.
3. The platform shall support opening door via NFC.

Applying Advertisement

The platform shall support applying advertisements to access control devices.

Audio Broadcast

1. The platform shall support batch configuring audio broadcasts, including daily audio broadcasts and particular audio broadcasts.
2. The platform shall support viewing record details of devices and captured pictures (if any) in Device Recorded Data Retrieval module.

4.15.8 Real-Time Monitoring

Real-Time Door Status Monitoring

1. The platform shall support displaying the status of the door magnetic/door lock.
2. The platform shall support starting live view of linked cameras.
3. The platform shall support selecting multiple access points (you can drag your mouse or click to select while you press the Shift key).
4. The platform shall support selecting all access points.

Real-Time Event Monitoring

1. The platform shall support uploading events in real time.
2. The platform shall support filtering by event type.
3. The platform shall support filtering by access point.
4. The platform shall support customizing columns to be displayed.
5. The platform shall support subscribing to specific event types.
6. The platform shall support a lasting display of the information about the current recognized person, including profile photo, face picture, and person introduction. The platform shall support transforming the window to a thumbnail window.

Real-Time Monitoring on Map

1. The platform shall support displaying resource status in real time (access point, alarm input, and alarm output).
2. The platform shall support real-time remote control (access point, alarm input, and alarm output).
3. The platform shall support displaying alarms of resources (access point, alarm input, and alarm output) in real time.
4. The platform shall support real-time live view of the camera linked with the door.
5. The platform shall support displaying regional entry & exit counting in real-time.
6. The platform shall support displaying multi-door interlocking in real time.
7. The platform shall support displaying anti-passback in real time.

4.15.9 Effective Emergency Response

Batch Emergent Door Control

Support remotely controlling doors one by one or in a batch in real time.

Roll Call

1. Support alarm input linkage to automatically remain all doors or doors of a specific area open.
2. Support automatically triggering the printer to print the list of stayed people of all areas or a specified area.

4.15.10 Access Records

Identity Access Records Retrieval

1. The platform shall support filtering resigned persons.
2. The platform shall support searching for identity access records and export to Excel or CSV files.
3. The platform shall support exporting entry & exit records to PDF files.
4. The platform shall support automatically getting lost identity access records from the device by schedule.
5. The platform shall support manually getting all identity access records during the specified time period from the device.
6. The platform shall support manually importing identity access records exported from the device to the platform.
7. The Identity Access Search page shall support customizing column items to be displayed.

Device Recorded Data Retrieval

1. The platform shall support searching for device recorded data which can be exported to Excel or CSV files.
2. The platform shall support exporting device logs to PDF files.

Entry & Exit Counting Retrieval

1. The platform shall support searching for entry & exit counting results which can be exported to Excel or CSV files.
2. The platform shall support exporting final authentication counting statistics to PDF files.

4.15.11 Visualized Report

1. Support today's access records which can be exported to PDF, JPG, or PNG files.
2. Support today's access trend which can be exported to PDF, JPG, or PNG files.
3. Support today's abnormal records top 5 which can be exported to PDF, JPG, or PNG files.
4. Support regional stayed people counting.

4.15.12 Privacy Protection Settings

1. Event storage configuration: overwrite, delete old events regularly, and delete old events by specified time.
2. Authentication configuration: whether to display the photo, name, employee No., and temperature in the authentication result.
3. Picture uploading and storage configuration: upload recognized or captured pictures, save recognized or captured pictures, save profile photos, upload event and alarm pictures, save event and alarm pictures, upload thermal pictures, and save thermal pictures.

4. Clear pictures stored on the device quickly: clear face pictures and clear recognized or captured pictures.
5. Delete face pictures of one person or all persons.

4.16 Visitor Management

- ***Reservation and Check-In/Out***
- ***Visitor Pass***
- ***Visitor Terminal***
- ***Visitor Access***
- ***Visitor Records***

4.16.1 Reservation and Check-In/Out

Visitor Reservation

1. Administrator can make reservations for visitors on the Web Client and Mobile Client.
2. The platform shall support batch importing visitor reservation information and replacing repeated visitors.

Self-Service Reservation

1. Employees can make reservations for visitors on a web browser by scanning a QR code using a mobile phone.
2. The platform shall support displaying the visitor QR code right after successful self-service reservation on the Mobile Client.
3. The platform shall support enabling face quality verification on a device that have the capability.
4. The platform shall support enabling self-service reservation approval. When it is enabled, all self-service reservations will be effective after the review and approval of the administrator.
5. The platform shall support setting the default visitor group of self-service reservation.
6. Administrator can review the self-service reservation records and then approve, reject, or delete the reservations.
7. The platform shall support configuring visitor approval flows.
8. The platform shall support reviewers specified in the visitor approval flows to approve and reject the visitor reservations after self-service login.
9. The platform shall support configuring access levels for visitors when making self-service reservations.
10. The platform shall support assigning the permission for reviewing reservations to specific users.

Auto Sending of Visitor Reservation Code

The platform shall support sending a 4-digit or 6-digit reservation code to the visitor via email automatically when making reservations.

Parking for Visitors

The platform shall support opening the barrier gate when the visitors' vehicles arrive if the license plate number is filled in when making reservations.

Visitor Check-In

1. For visitors with a reservation, they can check in by providing the reservation code, phone number, or certificate number. Visitors' information will be shown and can be edited or replenished.
2. For visitors without a reservation, users can check in for them on site by filling in the visitors' information.
3. For visitors without a reservation but have visited previously, users can select the persons from the visitor group to quick check in for them.
4. The platform shall support exporting visitor check-in information and access records.
5. The platform shall support quickly checking in any history visitor, no matter the visitor has been deleted or not.
6. The platform shall support reading the passport information via KR420 passport reader.
7. The platform shall support reading the United Arab Emirates ID card information via the United Arab Emirates ID card reader that is connected to the PC.
8. The platform shall support reading the Thai ID card information via the Thai ID card reader that is connected to the PC. Supported Thai ID card readers: HawkEye (TRK2700RB and TRK2700R), Elyctis (IDBox PDK3302R2S).

Auto Sending of Access QR Code

The platform shall support sending the QR code for accessing the allowed areas to the visitors' email if the email address is filled in when checking in.

Dynamic QR Code

1. The platform shall support switching between the static QR code and dynamic QR code.
2. The platform shall support configuring the validity period for the dynamic QR code (1 min by default).
3. The platform shall support checking the dynamic QR code, auto updating the dynamic QR code, and updating manually the QR code by visitors after successful reservation.

Visitor Check-Out

1. The platform shall support checking out for the visitors manually.
2. The platform shall support setting multiple access points as the self-service check-out points.
3. The platform shall support setting multiple card readers as the self-service check-out points.
4. The platform shall support checking out at the self-service check-out points.
5. The platform shall support enabling "Auto Checkout for Visitor After Effective Period" so that the platform will not issue overstay alarms.

6. The platform shall support quickly checking out a visitor through the visitor's ID number, phone number, name, or card number, or by scanning the QR Code on the visitor pass. To make scanning QR codes available, users need to add scanning devices to the platform.
7. The platform shall support searching for a visitor to check them out by swiping their passport on the KR420 passport reader plugged into the PC where the Web Client runs.

Customizing to Users' Needs

1. The platform shall support customizing visit reasons.
2. The platform shall support customizing visitor groups.
3. The platform shall support customizing reservation email templates.
4. The platform shall support customizing check-in email templates.
5. The platform shall support customizing the digits of the reservation code.
6. The platform shall support customizing the default check-out time.
7. The platform shall support customizing the information fields on the visitor reservation page or visitor check-in page.

Check-In Not Required If Reservation Confirmed

1. The platform shall support enabling/disabling the platform to automatically check in visitors when reservations are made for the visitors."
2. When the feature is enabled, visitors shall not check in at the reception area. They shall be able to access the specified access points directly through the QR codes on their visitor passes. When the feature is disabled, visitors shall check in at the reception area first before they can access the access points.

Notify Related Persons via Email

1. The platform shall support automatically sending an email to the host when a reservation is made.
2. The platform shall support automatically sending an email to the host when a reservation fails to be made.
3. The platform shall support automatically sending an email to the visitor when the reservation for the visitor fails to be made.
4. The platform shall support automatically sending an email to the host when the corresponding visitor is checked in.
5. The platform shall provide default email templates.

Push Reservation Results via WhatsApp

1. The platform shall support scanning the WhatsApp QR code provided by the host with WhatsApp and making a reservation in WhatsAPP.
2. The platform shall support receiving the reservation results via WhatsApp after reservation, including the reservation details and visitor QR code (static QR code or URL of the dynamic QR code).
3. Refer to ***Protocol Integration*** for configurations of WhatsApp accounts.

4.16.2 Visitor Pass

1. The platform shall support 58 mm thermo-sensitive printer.
2. The platform shall support editing the custom visitor pass template in a visualized way and previewing the template.
3. The platform shall support configuring the visitor information fields, background picture, custom pictures, custom texts, font, and font size of the visitor pass template.
4. The platform shall support setting the text colors for visitor pass templates.
5. The platform shall support automatically printing a visitor pass when a visitor is checked in; support manually printing a visitor pass anytime.

4.16.3 Visitor Terminal

1. The supported visitor terminal models shall include DS-K5032 (Self-Service), DS-K5032-D (Staff-Service), DS-K5032-3XFD (Staff-Service & Temperature Screening).
2. The platform shall support basic management of visitor terminals, including adding and deleting visitor terminals, changing passwords, setting time zone, restoring to default parameters, updating firmware, and searching visitor terminals on the same LAN through SADP.
3. The platform shall support applying access levels to the visitor terminals added to the platform.
4. The platform shall support applying the host information to the visitor terminals added to the platform.
5. The platform shall support applying reservation codes to the visitor terminals added to the platform.
6. The platform shall support two-way synchronization of the registered visitor information (from the platform to the visitor terminals or vice versa).

4.16.4 Visitor Access

Restricted Access for Visitors

1. The platform shall support setting the access levels of visitors and setting a default access level for new visitors.
2. The platform shall support applying the access levels to access control devices automatically after checking in.
3. The platform shall support withdrawing the access levels of visitors after checking out.

Visitor Blocklist

1. The platform shall support moving visitors to blocklist.
2. The platform shall support removing visitors from blocklist.

3. The platform shall support batch importing visitor information to blocklist and replacing repeated visitors.
4. Users shall not be able to make reservations or check in for the visitors in the blocklist. The platform shall support notifying the user when reserving or checking in for visitors in the blocklist.

Visitor Certificate Picture

1. When making a reservation or checking in for a visitor, users shall be able to upload a picture or take a picture of the certificate via PC webcam (Web Client) or mobile phone camera (Mobile Client).
2. The platform shall support displaying the certificate picture when checking out.

Visitor Belongings Check

1. When checking in for a visitor, users shall be able to upload a picture or take a picture of the visitor's belongings via PC webcam (Web Client) or mobile phone camera (Mobile Client).
2. The platform shall support displaying the belonging picture when checking out. User can choose to take the picture again.

Visitor Overstay Alarm

1. The platform shall support notifying an alarm when a visitor does not check out after the check-out time. User can choose to enable auto check-out or enable alarm detection to detect overstaying visitors.
2. The platform shall support displaying the visitor information when issuing an overstay alarm.

Visitor Watch List

1. The platform shall support configuring the watch list to monitor special visitors by name, company, and ID number. The involved procedures include reservation, reservation review, and check-in.
2. The platform shall support automatically opening a notification window when a visitor registered in the reservation or check-in process has attributes that match entities in the watch list; support making a reservation for, checking in, or rejecting the visitor. Moreover, the statistics of rejection times is supported.

Manage Permission for Accessing Visitor Group

The platform shall support assigning the permission for accessing a specific visitor group to specific users.

4.16.5 Visitor Records

Daily Visitor Statistics

1. The platform shall support displaying the number of total visitors and unchecked-out visitors on the current day.
2. The platform shall support filtering and listing visitor information (categorized by total or unchecked-out visitors).
3. The platform shall support exporting the search results.

Visitor Access Records Search

1. The platform shall support searching for visitors by setting conditions, including certificate number, name, phone number, company, visitee, visit reason, visit time, check-in/out status, and skin-surface temperature status.
2. The platform shall support exporting the search results.
3. The platform shall support recording the last access point of a visitor.

Entry & Exit Records Search

Refer to ***Access Records*** .

Visitor Dashboard

The platform shall support viewing the overview of the data related to visitors on a dashboard, including the number of visitors on the current day, checked-in visitors, checked-out visitors, and visitors who have checked in but have not checked out.

4.17 Parking Lot

- ***Parking Lot Operation***
- ***Parking Fee Collection***
- ***Parking Lot Configuration***
- ***Alarms in Parking Lot***

4.17.1 Parking Lot Configuration

Basic Parameters

1. The platform shall support adding multiple parking lots for management.
2. The platform shall support adding, deleting, and editing parking lots. The basic settings for a parking lot include the number of lanes, the number of parking spaces, the number of vacant parking spaces, the number of parking spaces for registered vehicles, the number of vacant parking spaces for registered vehicles, the maximum parking duration allowed, etc.
3. The platform shall adding sub parking lots to one parking lot.
4. The platform shall support configuring the lanes added to the entrance and exit of a parking lot, including the lane name, entry & exit time, entry & exit rule for different types of vehicles, etc.

5. The platform shall support configuring the following ways to open the barrier gate at the entrance and exit:
   a. Open after recognizing the license plate number;
   b. Open after a vehicle owner swipes his/her card;
   c. Open after receiving confirmation from the center.
6. The platform shall support two-way audio between the entrance & exit and the call center via video intercom devices.
7. The platform shall support two-way audio between the entrance & exit and the call center via the entrance/exit station.
8. The platform shall support configuring guidance screens for entrances and exits, and configuring the information displayed on the guidance screens, including the license plate number, parking fee, etc.
9. The platform shall support adding entrance/exit control devices to the platform on the Web Client.
10. The platform shall support managing parking spaces outdoor and configuring outdoor parking guidance on the Web Client.
11. The platform shall support adding entrance/exit control devices via ISUP.
12. The platform shall support relating cameras to lanes for daily monitoring.
13. The platform shall support configuring the parking fee mode for a parking lot. If users set the parking fee mode as "Charge", users can select a currency according to the country where the parking lot is located.
14. The platform shall support linking an entrance/exit station with a line for controlling the barrier. After a temporary vehicle or a vehicle with no license plate gets a ticket or card from an entrance/exit station, the station will control the barrier gate to open and let the vehicle enter.
15. The platform shall support searching passing vehicles in the entrances & exits of a parking lot.
16. The platform shall support searching the parking duration and parking records of a specific vehicle.
17. The platform shall support searching the occupancy rate of different floors and different parking space types.
18. The platform shall support linking a lane with two access control devices.
19. The platform shall support assigning the parking lot permission by user.
20. The platform shall support setting the displayed license plate number to registered license plate number or ANPR captured license plate number.
21. The user shall be able to configure the ringtone for callings from the parking lot devices on the Control Client. The user shall be notified with a sound when a calling is received.
22. The platform shall support displaying a test text on display screens to test the device connection.

Entry & Exit Rule

1. The platform shall support configuring the entry & exit mode, including:

   a. Entry Mode: no repeated entry, license plate and card match;
   b. Exit Mode: license plate and card match, whether to allow a vehicle to exit when its parking fee is 0.
2. The platform shall support enabling or disabling auto account deduction.
3. The platform shall support configuring the entry & exit method for vehicles according to their types (registered vehicle/temporary vehicle/visitor vehicle). The method can be "Manual" or "Automatic", and the latter. The platform shall support configuring the time range of entry & exit.
4. The platform shall support configuring whether to allow registered vehicles/temporary vehicles/ visitor vehicles to enter when there are no vacant parking spaces.
5. The platform shall support configuring the entry & exit method ("Manual" or "Automatic") by vehicle list and the time range of entry & exit.
6. The platform shall support configuring whether to allow vehicles in list to enter when there are no vacant parking spaces.
7. The platform shall support configuring the number of parking spaces and the number of vacant parking spaces by vehicle list, and the configured parameters are only applied to the vehicles in that vehicle list.
8. The platform shall support configuring free entry & exit on holidays.
9. The platform shall support configuring the pricing mode for multiple vehicles under one account, including extra vehicle pay and first exiting vehicles pay.
10. The platform shall support linking two capture units with a lane.
11. The platform shall support linking one ANPR camera with two lanes to be applicable to the entrance & exit without barrier gate installed.
12. The platform shall support setting entry mode as Person and License Plate Match on the Web Client.
13. The platform shall support configuring alarm linkage. When the alarm is triggered, the selected or all the entrances & exits will remain open.

Parking Fee Rule

1. The platform shall support configuring the parking fee rule for vehicles in list and temporary vehicles, the rule includes:
   a. Free;
   b. Charge by unit parking duration;
   c. Charge by session;
   d. Charge by time range;
   e. Charge by clock time;
   f. Charge by time and session in daytime and nighttime;
   g. Charge by unit time range.
2. The platform shall support relating a parking pass to a registered vehicle, the types of parking pass are: annual, monthly, custom (days), monthly (idle time).
3. The platform shall support previewing and verifying the parking fee rule to ensure that it meets users' requirements.

4. The platform shall support configuring the discount method for a discount rule. The method includes percentage discount, fee discount, free parking, and parking duration reduction.
5. The platform shall support configuring the parking fee rule for exceptional pass to charge a fixed fee for exceptional passes.
6. The platform shall support additional configuration to configure the free parking duration after payment.
7. The platform shall support issuing temporary cards.

Parking Guidance

1. The platform shall support adding floor(s) to a parking lot, and adding guidance terminals and guidance screens to the added floor(s).
2. The platform shall support adding a map to a parking lot, and configuring parking spaces for the parking lot on the map, including the position of parking lots, and parking space No.
3. The platform shall support marking guidance screens on the map to display the number of vacant parking spaces.
4. The platform shall support configuring the parking space type, such as private parking space, charging parking space.
5. The platform shall support configuring the types and colors of parking spaces.
6. The platform shall support mounting ANPR cameras on the top floor to count the number of entering and exiting vehicles. The number of vacant parking spaces will be displayed on the guidance terminal.
7. The platform shall support counting parking spaces on different floors by the ANPR camera. With ANPR cameras, the number of entering and exiting vehicles of a floor can be counted, and the number of real-time parking spaces of a floor can be displayed.
8. The platform shall support enabling or disabling parking space statistics for specific floors according to the time template. During the disabling time, the vacant parking spaces of specific floors will not be included in the vacant parking space statistics or displayed on the entrance guidance screen.
9. The platform shall support checking the information currently displayed on an indoor guidance screen (DS-TVL121) and viewing the detailed information about the parking space(s) linked to it, such as parking space No., floor where the parking space is located, whether the parking space is occupied, and the picture of the parking space captured at the moment.
10. The platform shall support relating vehicle list(s) to the parking space when configuring parking space types.
11. The platform shall support displaying the data of other parking lots on the guidance screen of the current parking lot.
12. The platform shall support directly adding entrance guidance screens to the platform without adding a parking terminal with the model of TPE400.
13. The platform shall support directly add parking cameras.

Self-Service Vehicle Finding Client

1. The platform shall support displaying the position of vehicle owner on the Self-Service Vehicle Finding Client.
2. The Self-Service Vehicle Finding Client (Android) shall be installed on the DS-TPW332-C Query Terminal (Android) or the third-party query terminals. The Client shall help to find vehicles in the parking lot easily. When the vehicle owner is searching for the vehicle, it shall support displaying both the vehicle owner and the vehicle's position on the map.
3. The Client shall supports planning the vehicle finding route.

4.17.2 Parking Fee Collection

Methods for Parking Charges

1. Pay in the Toll Center (both supported on the Web Client and Control Client): The platform shall support searching for a specific vehicle to get its parking fee by entering the license plate number, selecting the displayed picture (if a vehicle's license plate is not captured and recorded), swiping the temporary card, or scanning the parking receipt. The parking fee will be manually collected by the operator in the toll center. After the parking fee is paid, the vehicle should exit the parking lot within a specified period.
2. Pay at the Booth: The platform shall support searching for a specific vehicle to get its parking fee by entering the license plate number or swiping the temporary card for manually collecting the parking fee and allowing the vehicle to exit the parking lot.

Parking Receipt

1. The platform shall support printing the parking receipt.
2. The platform shall support printing receipts after topping up parking passes.

4.17.3 Parking Lot Operation

Parking Space Overview

1. The platform shall support parking space overview to view the statistics of parking spaces, including the occupancy rate of parking spaces, the number of parking spaces, the number of vacant parking spaces, the number of occupied parking spaces, etc.
2. The platform shall support viewing the detailed information about a parking space on the map.
3. The platform shall support searching for a vehicles by parking space No., license plate number, and parking time.
4. The platform shall support exporting details of parking spaces with the unknown status, such as the related parking space numbers and the corresponding parking lot and floor information, to the local PC as an XLSX file.

Record Search

1. The platform shall support plate fuzzy search, and the users can customize search rules.
2. The platform shall support searching for passing vehicles detected by entrances and exits, and displaying the related information.
3. The platform shall support searching for visitor vehicle records by time, visitor name, etc., and displaying related information.
4. The platform shall support searching for parking records by time, license plate No., parking status, etc., and displaying the related information.
5. The platform shall support searching for parked vehicles in parking lots and displaying related information.
6. The platform shall support searching for payment records by time, license plate No., operator, vehicle type, etc., and displaying related information.
7. The platform shall support searching for top-up and refund records by time, license plate No., vehicle type, transaction type, transaction method, etc., and displaying related information.
8. The platform shall support searching for account transaction records by time, vehicle owner account, transaction type, etc., and displaying related information.
9. The platform shall support searching for operator shift records by time and operator, and displaying related information.
10. The platform shall support searching for coupon records by vehicle type, coupon status, discount rule, etc., and displaying related information.

Statistics and Reports

1. The platform shall support viewing the statistics of parking lots, such as the health of devices (guidance terminals, parking cameras, etc.).
2. The platform shall support displaying the statistics of parking lot operation by time, including the real-time statistics of parking spaces, the occupancy rate of a parking lot, the distribution of parking duration, traffic flow, etc., and The platform shall support exporting the statistical report to the local PC.
3. The platform shall support displaying the statistics of transactions by time, including the revenue type, revenue trend, etc., and The platform shall support exporting the statistical report to the local PC.
4. The platform shall support sending the report on parking lot operation analysis by day, week, or month.
5. The platform shall support customizing the display layout of operation analysis report by selecting different statistics types.

Entrance & Exit Control

1. The platform shall support displaying the real-time captured pictures of passing vehicles, and displaying the related information including the license plate No., passing time, etc.
2. The platform shall support adding the license plate No. of a passing vehicle to the vehicle list in the platform for management when viewing the real-time vehicle passing records.

3. The platform shall support searching for passing vehicles and viewing videos of ANPR cameras and the linked cameras.
4. The platform shall support playing the live videos streamed from the cameras related to entrances and exits.
5. The platform shall support opening and closing the barrier gate, and making the barrier gate remain open manually.
6. The platform shall support editing a license plate No. manually if the ANPR camera recognizes the license plate No. incorrectly.
7. The platform shall support displaying the information about operator shifts, and The platform shall support printing the information about the payment managed by the operators, including the total amount collected, the total discount amount, etc.
8. The platform shall support displaying the vacant parking spaces of different vehicle lists on the guidance screens in the entrance & exit lane of a parking lot.
9. The platform shall support displaying the number of vacant parking spaces for vehicles in the list when the vehicles in the list enter the parking lot.
10. The platform shall support configuring the entry&exit not allowed prompt to inform the driver of reasons why the entry/exit is not allowed.

4.17.4 Alarms in Parking Lot

1. The platform shall support regularly uploading overtime parking reports to the SFTP or local storage for evidence management.
2. The platform shall support the alarm of driving on the lane line.
3. The platform shall support the TPM motion detection alarm.

4.18 Security Inspection

- ***Security Inspection Channel***
- ***Security Inspection Visualization***
- ***Security Inspection Visualization***
- ***Statistics and Reports***
- ***Historical Data Search***

4.18.1 Security Inspection Channel

1. The platform shall support adding security inspection channels to the area. Support deleting and editing security inspection channels.
2. The platform shall support linking devices to the security inspection channel. Up to 1 analyzer and 3 walk-through metal detectors can be linked.
3. The platform shall support linking network camera for each security inspection channel. Up to 8 network cameras are allowed for each security inspection channel.

4.18.2 Security Inspection Visualization

Visualization Based on Security Inspection Channels

1. Support viewing real-time package information, including the package picture, total number of packages, total number of packages with prohibited articles, and total number of prohibited articles.
2. Support marking detected articles in package pictures. Pictures can be magnified.
3. Support configuring prohibited articles for real-time alarms.
4. Support viewing the real-time picture of the package's owner.
5. Support viewing the real-time picture of the checked person, the total number of checked people, and the total number of people who carried metal.
6. Support viewing the real-time temperature of the checked person (if the walk-through metal detector supports temperature measurement).

Visualization Based on Analyzers

1. Support live view and playback of the analyzer's inspection videos.
2. Support marking detected articles in video stream. Support viewing video in the full-screen mode, capturing, recording, and switching between main stream and sub stream.
3. Support viewing the package's pictures and the package owner's picture.

Visualization Based on Walk-Through Metal Detectors

1. Support viewing real-time detected information
2. Support viewing real-time temperature information of the detected person (if the walk-through metal detector Support temperature measurement function).

4.18.3 Security Inspection Visualization

Prohibited Article Alarm

The platform shall support receiving real-time alarms when the prohibited article is detected.

Metal Detection Alarm

The platform shall support receiving real-time alarms when the metal is detected.

Absence Alarm

The platform shall support receiving real-time alarms when the security personnel's abnormal absence is detected.

Prohibited Article Handling

1. The platform shall support configuring prohibited article type for prohibited articles.
2. The platform shall support selecting a handling action for detected prohibited article at security inspection systems, analyzers, or walk-through metal detectors.

4.18.4 Statistics and Reports

Package Detection

1. Support generating package detection reports by day, week, month, and year.
2. Support viewing the total number of detected packages and total number of packages with prohibited articles of specific security inspection channels within a specific period.
3. Support viewing percentage of packages with prohibited articles of specific security inspection channels within a specific period.
4. Support viewing prohibited article types within a specific period.

People Inspection

1. Support generating people inspection reports by day, week, month, and year.
2. Support viewing the total number of detected persons and total number of persons with metals of specific security inspection channels within a specific period.
3. Support viewing percentage of metal detection alarms of specific security inspection channels within a specific period.

4.18.5 Historical Data Search

Package Detection Record Search

1. Support searching for package detection records by time, prohibited article type, and channel. The result includes package detection time, location, article type, and number of prohibited articles.
2. Support viewing package details, including package's pictures, captured picture of the package owner, and videos recorded before/after the package is detected.

Metal Detection Record Search

1. Support searching for metal detection records by time and channel. The result includes detection time, location, and signal strength of the metal.
2. Support viewing metal details, including metal location, signal strength, and videos recorded before/after the metal is detected.

Absence Record Search

1. Support searching for absence records by time and channel. The result includes absence time, location, and absence duration.
2. Support viewing absence details, including the videos recorded before the personnel leaves and after the personnel comes back.

4.19 Temperature Screening

- ***Service Configuration***
- ***Person Registration***
- ***Temperature Monitoring***
- ***Statistics and Reports***

4.19.1 Service Configuration

Device Management

Support adding cameras with temperature screening functions.

Temperature Screening Configuration

1. Support creating temperature screening point groups and adding temperature screening points to the groups.
2. Support configuring the threshold for temperature screening.
3. Support configuring the threshold for temperature alarms.

4.19.2 Person Registration

Support registering person information if the screened person is not registered, including the person's name, ID, phone number, whether from high-risk areas, description, etc.

4.19.3 Temperature Monitoring

Temperature Monitoring

1. Support registering person information if the screened person is not registered, including the person's name, ID, phone number, whether from high-risk areas, description, etc.
2. Support viewing the real-time captured pictures of the specified temperature screening point group.
3. Support viewing previously captured pictures in thumbnail mode with the person's face picture, temperature, temperature mark color, mask wearing status, etc.

4. Support viewing alarm information of the specified temperature screening point group, including the person's captured picture, temperature, temperature mark color, mask wearing status, etc.
5. Support viewing the real-time captured pictures of the specified temperature screening point.
6. Support viewing previously captured pictures in thumbnail mode with the person's face picture, temperature, temperature mark color, mask wearing status, person group, etc.
7. Support viewing real-time temperature screening events, including the person's name, temperature, temperature mark color, mask wearing status, etc.

History Data

1. Support searching for historical temperature screening data of the specified temperature screening point group. The result includes the person's captured picture, temperature, temperature mark color, mask wearing status, person group, etc.
2. Support searching for registered person information. The result includes person name, ID, phone number, whether from high-risk areas, person in charge of registering, register time, screening time, etc.
3. Support searching for temperature screening events of the specified temperature screening point. The result includes event time, channel, mask wearing status, whether the temperature is abnormal, etc.

4.19.4 Statistics and Reports

1. Support the following report types: daily report, weekly report, monthly report, annual report, and report with a custom time interval.
2. Support analyzing results by temperature screening point. Support displaying the overall screening statistics and the statistics of people with abnormal temperature or those not wearing any face masks.
3. Support analyzing results by department. Support displaying the overall screening statistics and the statistics of people with abnormal temperature or those not wearing any face masks.
4. Support exporting the report to the local PC.

4.20 Video Intercom

- ***Independent Module***
- ***Video Intercom Device Management***
- ***Live Two-Way Audio***
- ***Notice Applying***
- ***Call Log***
- ***Centralized Management of Video Intercom Module***

4.20.1 Independent Module

1. Supports independent video intercom module and independent entry to the module.
2. Supports the dashboard which includes device maintenance, daily statistics of applied notices, and statistics of calls of the current day.
3. Supports batch configuring parameters for video intercom devices.

4.20.2 Video Intercom Device Management

Accessing Devices via Multiple Protocols

1. The platform shall support accessing devices via Device Network SDK or IP address.
2. The platform shall support displaying device information, including device name, location, serial number, version, the number of doors, the number of cameras, the number of alarm inputs, location No., network status, and password strength.

Device Configuration

1. Platform Parameters Configuration (Device Network SDK): IP address, port, alias, username, password, time zone, and channel resource.
2. The platform shall support batch setting the time for video intercom devices.
3. Device Location Number Configuration
   - Indoor Station: community No., building No., unit No., and room No.
   - Door Station: community No., building No., and unit No.
   - Outer Door Station/Main Station: community No.
4. The platform shall support setting the floor No. for indoor stations.
5. The platform shall support linking resident information (only for indoor station).
6. The platform shall support jumping to the configuration page of the device.
7. The platform shall support accessing configuration library (only for the devices not supporting the configuration via web browser).
8. The platform shall support linking indoor stations with cameras (up to 16 cameras per indoor station).
9. The platform shall support linking the doorbell with the indoor station.
10. The platform shall support applying software packages to indoor stations in a batch.

Device Settings Applying

The platform shall support applying the location No. and the corresponding network parameters of all video intercom devices to all devices.

Remote Control of Device

1. The platform shall support changing the password (single or in a batch).
2. Time zone settings: getting the time zone settings of a device and applying these settings to other devices (single or in a batch).
3. The platform shall support restoring the default parameter (single or in a batch).

Real-Time Detection of Device Status

1. The platform shall support displaying online status of device.
2. The platform shall support viewing the network status of the device.
3. Persistent connection status of the two-way audio called by device.
4. The platform shall support viewing arming status.
5. The platform shall support viewing battery status of the device.
6. The platform shall support viewing the time when the device is added for the first time and the time of its first inspection.

4.20.3 Live Two-Way Audio

Call Schedule of Door Station

1. The platform shall support configuring schedules for calling the indoor station or the management center (platform or main station).
2. The platform shall support importing door stations' call schedules in a batch. (Excel)

Two-Way Audio Between Platform and Door Station

1. The platform shall support two-way audio.
2. The platform shall support live view during two-way audio.
3. The platform shall support recording and saving video and audio to the local PC.
4. The platform shall support remote door control during two-way audio.
5. The platform shall support remotely unlocking the door before answering the call.

Two-Way Audio Between Platform and Indoor Station

1. The platform shall support two-way audio.
2. The platform shall support live view during two-way audio.
3. The platform shall support starting two-way audio in the event pop-up window.

Specify Persons to Answer Calls

1. The platform shall support specific persons answering the call from the device.
2. The platform shall support specific persons answering calls at specified time periods.

Two-Way Audio Between Device and Web Client

The platform shall support calling indoor stations and answering calls from devices via the Web Client.

Sequence of Answering Calls

When video intercom devices call the Center, the earliest and unanswered call shall be listed as the first one to be answered.

Automatically Saving Volume of Two-Way Audio

In the Video Intercom module, the two-way audio volume of microphone and loudspeaker shall be saved and used in the following two-way audio.

4.20.4 Notice Applying

Batch Applying Notices to Indoor Stations

1. Supports batch applying notices to indoor stations. Notices can include pictures and texts which can be displayed in multiple languages, for example, Russian.
2. Supports searching history notices by setting conditions including the theme, content, resident, type, and time.
3. Supports exporting history notices.
4. Support applying event/alarm related notices.

4.20.5 Call Log

Calls Between Platform and Indoor Stations / Door Stations

1. Supports saving logs of calls between the platform and indoor stations / door stations.
2. Supports viewing call statistics (the number and logs of calls answered or not answered) quickly.
3. Supports searching logs of calls by setting conditions including device, call duration (start time and end time), and call status.
4. Supports viewing details of any call log and calling the indoor station again.

4.20.6 Centralized Management of Video Intercom Module

1. The platform shall support independent video intercom module and independent entry to the module.
2. The platform shall support the dashboard which includes device maintenance, daily statistics of applied notices, and statistics of calls of the current day.
3. The platform shall support batch configuring parameters for video intercom devices.
4. The platform shall support upgrading firmware of door stations in a batch.

4.21 On-Board Monitoring

4.21.1 Multi-Scenario Deployment

Device Management

1. The platform shall support adding detected online on-board devices.
2. The platform shall support accessing on-board devices via ISUP when the devices are connected to the Internet or Wi-Fi.
3. The platform shall support synchronizing the time zone with that of the on-board device and manually setting the time zone of the on-board device.
4. The platform shall support getting and displaying device information for device management, including device serial No., firmware version, the encoding device's channels for linking with cameras, alarm input/output information, and ACC status.
5. The platform shall support getting and displaying device information for device management, including device serial No., firmware version, the encoding device's channels for linking with cameras, and alarm input/output information.
6. The platform shall support jumping to the device's Web page for remote configuration, including configuring parameters of the device and the linked channels.
7. The platform shall support batch upgrading firmware packages (via FTP and HTTP) and setting the concurrency for package bandwidth management.

Storage Solution

1. The platform shall support configuring storage parameters, including video stream type (main/sub/dual), time-based/event-based recording schedule, and video file expiry time.
2. The platform shall support 4G real-time redundant storage. When an event occurs, the first copy is stored on the on-board encoding device and the second copy is stored on pStor/ HybridSAN/cloud storage for security purposes.
3. The platform shall support copying back video to central storage for backup via W-Fi or 4G. Once a vehicle reaches its destination and the on-board device successfully connects to the Wi-Fi or 4G there, the video recorded during the journey will be copied back to the central storage (pStor/HybridSAN/cloud storage) for backup.

4. The platform shall support configuring the picture storage (local storage/pStor/HybridSAN/cloud storage).
5. The platform shall support copying back videos from HybridSAN by specifying the start and end time. The platform shall support copying back the videos stored before the on-board device is added to the platform. The cooperation between video copying back and on-board device local storage can better meet users' needs.

Streaming for Multi-Client in WAN

1. With the built-in streaming media, multiple clients in WAN shall be able to access and stream from one device added via ISUP in LAN.
2. The platform shall support adding external SMS server. The platform shall support streaming from devices through multiple channels via external streaming media based on the specified area.
3. The platform shall support automatically switching off streaming after the configured duration.
4. The platform shall support enabling stream encryption. When starting live view or remote playback, the client will verify the stream encryption key for security purposes.

Vehicle Management

1. The platform shall support creating areas for vehicle management.
2. The platform shall support adding the license plate number of the vehicle that the on-board device is related to. The platform shall support adding the vehicle to an existing area or a newly-created area. The platform shall supports editing the names of different resources, including the cameras, alarm inputs, and alarm outputs.
3. The platform shall support vehicle information management, including the license plate number, vehicle owner's name, telephone, vehicle type, vehicle color, vehicle brand, vehicle picture, and linked devices.

Driving Rule Configuration for Multi-Scenario

1. The platform shall support providing on-board monitoring overview, configuration wizard, basic maintenance information (online/total number of on-board devices, online/total number of cameras, exception/total number of alarm inputs), statistics and reports (driving distance of last 7 days, driving duration of last 7 days, and driving events of last 7 days) for users to quickly get started for on-board monitoring configuration and system maintenance.
2. The platform shall support setting kilometer or mileage as the distance unit for displaying the speed and distance.
3. The platform shall support setting the URL of the Google map API.
4. The platform shall support setting the retention period of GPS data (7/15/30/60/90/180 days or 1 year). Shorter period means smaller data storage space.
5. The platform shall support setting the frequency at which the GPS information is reported to the platform (5/10/15/30/60 seconds). Higher frequency means more bandwidth consumption and higher accuracy of GPS information.

6. The platform shall support setting multiple fence rules, including name, description, rule schedule template, vehicle list, fence type (for entry/exit detection), and fence area on the Google map.
7. The platform shall support setting multiple fence rules, including name, description, rule schedule template, vehicle list, fence type (for entry/exit detection), threshold for triggering rule, and fence area on the Google map.
8. The platform shall support setting multiple deviation rules, including name, description, rule schedule template, vehicle list, deviation threshold, and route on the Google map.

4.21.2 Driving Monitoring

Monitoring Pane

The platform shall support on-board monitoring via the monitoring pane to get the real-time information such as the vehicle list, Google map, live videos, and driving events.

Vehicle Operation

1. The platform shall support displaying the area that the vehicle belongs to, vehicle list, related channels. The platform shall support searching vehicles and areas.
2. The platform shall support displaying the total number of vehicles, number of online vehicles, and number of located vehicles. The platform shall support displaying online/located vehicle list.
3. The platform shall support adding vehicles to the Favorites list. The platform shall support viewing all the vehicles in the Favorites list.
4. The platform shall support displaying alarm status of the on-board devices.
5. The platform shall support displaying the vehicle details: license plate number, driver, driver's phone number, vehicle type, vehicle color, vehicle brand, and vehicle picture.
6. The platform shall support selecting multiple vehicles to locate them on the map.
7. The platform shall support placing a located vehicle in the center of the map.
8. The platform shall support two-way audio with the driver of the selected vehicle.
9. The platform shall support selecting multiple vehicles to broadcast to them.
10. The platform shall support getting the real-time location of the selected vehicle and displaying its real-time route on the map.
11. The platform shall support playing back the route of the selected vehicle. The platform shall support playing back the route on the map and the recorded video simultaneously.
    a. The platform shall support setting the duration for playback (latest 1 hour, latest 6 hours, today, yesterday, custom duration).
    b. The platform shall support selecting the vehicle-mounted cameras.
    c. The platform shall support setting the playback speed (1/8X, 1/4X, 1/2X, 1X, 2X, 4X, 8X).
    d. The platform shall support placing the vehicle in the center of the map.
    e. The platform shall support displaying the threshold of the driving speed.

   f. The platform shall support skipping the period without recorded video.
   g. The platform shall support stopping/starting playing back the route.
12. The platform shall support controlling the vehicle's alarm outputs. The platform shall support enabling/disabling specific alarm outputs.

Map Operation

1. The platform shall support displaying the map in full-screen mode or on the auxiliary screen.
2. The platform shall support displaying the configured fence rule and deviation rule on the Google Map.
3. The platform shall support drawing a round area on the map. The vehicles in the area will be displayed and supports selecting a specific vehicle.
   a. The platform shall support viewing vehicle details including GPS information and driving speed.
   b. The platform shall support two-way audio with the driver.
   c. The platform shall support tracking vehicles at real time.
   d. The platform shall support playing back the routes vehicles have traveled along.
   e. The platform shall support alarm output control.
4. The platform shall support specifying the start point and end point on the map to measure the actual distance between them. The platform shall supports displaying multiple lines for measuring distances on the map.
5. The platform shall support displaying alarm status of the vehicle which has been located on the map and view alarm details.

In-Vehicle Camera Monitoring

1. The platform shall support displaying the video module in full-screen mode or on the auxiliary screen.
2. The platform shall support live view or playback of 16 vehicle-mounted cameras at most, presetting and customizing window division.
3. The platform shall support live view or playback of single or all vehicle-mounted cameras in the vehicle.
4. The platform shall support the following functions for single channel: capturing, two-way audio, digital zooming, audio control, main/sub-stream switch, alarm output control, adding tags, recording manually (only for live view), video clipping (only for playback), fisheye expansion, image enhancement, PTZ control (only for live view), switching to instant playback, printing, zooming the selected areas, and exporting videos.
5. The platform shall support PTZ control for PTZ cameras (only for live view): controling priority configuration, lock time, multiple/single wiper, 3D positioning, preset (getting, setting, and calling presets of devices), pattern, patrol, focus, focal distance, iris, one-touch focus, light, lens initialization, manual tracking, capturing face picture manually, user priority configuration, and park.
6. The platform shall support displaying camera status: including frame rate, stream information, video standard, number of connections, network status, signal status, recording status, access

mode, channel type, device name, address, protocol type, storage information (main storage and auxiliary storage), and area.

7. The platform shall support marking out days on which videos are recorded on the calendar, playing videos in specific day and time, and dragging the timeline forward or backward to position the desired video segment.
8. The platform shall support searching for video files by setting conditions including recording type (time-based recording schedule, event-based schedule, manual recording, and ANR recording), tag type (event type, manually added tag, and other tags), and storage location.
9. The platform shall support fast playing by 1, 2, 4, and 8 times, slow playing by 1/2, 1/4, and 1/8 times.
10. The platform shall support synchronous playback and asynchronous playback.
11. The platform shall support playback of thumbnails: displaying thumbnails when hovering the cursor over the time line and clicking the thumbnail to play the corresponding video.
12. The platform shall support playing and pausing videos, and single frame backward and forward.
13. The platform shall support batch downloading videos recorded by vehicle-mounted cameras.

Driving Event Monitoring

1. The platform shall support detecting driving events in On-Board Monitoring module without any configuration.
2. The platform shall support selecting driving events which need monitoring: driving monitoring event, driver status monitoring event, and ADAS event.
3. The platform shall support driving monitoring event: Fence, Deviation, Overspeed, Collosion, Rollover, and Emergency Alarm. These events are also available for searching and event alarm function.
4. The platform shall support driver status monitoring event: including Smoking, Using Mobile Phone, Fatigue Driving, Hand Not on Steering Wheel, Hands Not on Steering Wheel, Using Mobile Phone and Hand Not on Steering Wheel, Distraction, Seat Belt Unbuckled, Absence, Yawning, Wearing IR Interrupted Sunglasses, and Video Tampering. These events are also available for searching and event alarm function.
5. The platform shall support ADSA events: Forward Collosion, Headway Monitoring Warning, Lane Deviation, Pedestrian Collision Warning, Speed Limit Warning, Failing to Yield for Pedestrians, Speeding at Zebra Crossing, and Blind Spot Warning. These events are also available for event search and event alarm function.
6. The platform shall support displaying details of real-time event monitoring: license plate number, area, driver, number of event (supports clustering by on-board device), time, event type, GPS info (click to view the location), driving direction, and alarm status (triggered or not triggered).
7. The platform shall support displaying details and real-time location of vehicles: including license plate number, area, time, GPS information, driving direction, and speed.

8. The platform shall support going to the driving event search page from the event list page.
9. The platform shall support viewing ANPR information, including license plate No., area, time (device), event type, GPS info, and driving direction. The platform shall support jumping to the ANPR module to view the passing vehicle information.

4.21.3 Driver Management

Driver Management

1. Support driver list management, including driver's name, ID, email, phone No., remark, driving license (number and picture).
2. Support driver group management. Supports adding multiple drivers to a group.
3. Support linking a driver / driver group when adding a vehicle for the purpose of getting the driver's statistics.

Statistics and Report

1. Support viewing driver statistics during last 7 days / last 30 days / a custom period.
2. Support viewing driver details, including name, profile photo, driving distance, driving duration, events per 100 kilometers, number of events, total fuel consumption, punctual departure rate, punctual arrival rate, unpunctual departures/arrivals, and remark.
3. Support setting event types for calculation.
4. Support top events distribution statistics during last 7 days / last 30 days / a custom period.
5. Support viewing the trend of fuel consumption per 100 kilometers on a daily, weekly, or monthly basis, or for a custom period.
6. Support viewing the trend of driving distance on a daily, weekly, or monthly basis, or for a custom period.
7. Support viewing the trend of driving duration on a daily, weekly, or monthly basis, or for a custom period.
8. Support viewing the trend of driving events on a daily, weekly, or monthly basis, or for a custom period.
9. Support viewing the trend of events per 100 kilometers during last 7 days / last 30 days / a custom period.

4.21.4 Route Management

Driving Monitoring

1. Support adding stops on the map. Support setting the name and enabling/disabling people counting for the stop.
2. Support adding driving routes by selecting stops, configuring the route, and setting shift schedules.
3. Support automatically generating a route among multiple stops.

4. Support setting a shift schedule by week. Support setting days of the week for repeating and the start time to take effect.
5. Support setting a shift schedule for a fixed date.
6. Support setting a shift schedule for a time period.
7. Support batch setting shift schedules for a route.
8. Support setting the arrival/departure time for each stop and the time difference allowed (accurate to minute).
9. Support setting the causes of unpunctual departure/arrival for different routes.
10. Support configuring stop event rules. Support setting stops allowing/forbidding triggering alarm inputs.
11. Support configuring route event rules. Support setting stops allowing/forbidding triggering alarm inputs.

Route monitoring

1. Support displaying the status of all routes including punctual routes and unpunctual routes.
2. Support filtering routes according to stops and route names.
3. Support displaying the stops of a route and the status of a vehicle (punctual, late or early arrival).
4. Support viewing the details of a route by clicking the route including the punctuality of vehicles at one stop and the punctuality of all vehicles at each stop.
5. Support adding notes during route monitoring by selecting predefined causes. The added notes will be included in the report.
6. Support clicking the icon of a specific vehicle to view the driving monitoring information including the real-time location, routes, triggered alarms, drivers' information, and vehicle operations.

Stop analytics report

1. Support generating statistics reports of all stops or selected stops.
2. Support viewing stop information of the past 7 days, the past 30 days, or a custom period.
3. Support showing the overall analytics of each stops, including the average punctual departure rate, average punctual arrival rate, average dwell time (in minutes), total unpunctual arrivals, and total unpunctual departures.
4. Support showing the top 10 / bottom 10 stop rankings for punctual departure rate, punctual arrival rate.
5. Support showing the top 10 / bottom 10 stop rankings for punctual arrival rate.
6. Support showing the top 10 / bottom 10 stop rankings for total driving time, actual driving duration and scheduled driving duration.

Route searching

1. Support searching for traveled routes according to route names, stop names, driver/driver group and vehicle information.
2. Support displaying route time, shift schedule, vehicle, driver/driver group, vehicle departure time, driving duration. Support managing each route record.

3. Support displaying route information of each shift schedule including scheduled driving time, actual driving time, scheduled departure time at a stop, actual departure time at a stop, scheduled arrival time at a stop and actual arrival time at a stop.
4. Support exporting the traveled route records.

4.21.5 Fuel Consumption Management

Fuel Level Monitoring Configuration

1. Support configuring fuel consumption unit.
2. Support configuring fuel tanks including names, tank capacity, fuel level, threshold of fuel consumption.
3. Support having an overview of fuel levels according to the parameter of tank types of different vehicles.
4. Support configuring a fuel level difference threshold. When the difference exceeds the configured value, an alarm will be triggered.

Fuel Level Records Search

1. Support searching for fuel level records according to time, vehicle, driver/driver group.
2. Support displaying fuel consumption per 100 kilometers of a selected driver and fuel consumption of every driver.
3. Support displaying the reported fuel consumption records of every driver including driver, fuel consumption, driving distance, and fuel consumption per 100 km.
4. Support displaying the fuel consumption trend of a specified vehicle.
5. Support displaying the reporting location of real-time fuel consumption on the map.
6. Support displaying vehicle, driver,fuel consumption, total tank capacity and GPS information linked to a certain unit of fuel consumption.
7. Support exporting reports.

4.21.6 Statistics and Report

Various Report Types

1. Support the overview of on-board monitoring statistics and report, including the six report types: GPS information, driving distance, driving duration, speeding times, driving events, and device online rate.
2. Support generating the report on GPS-related information of specific vehicles in a specific period.
3. Support displaying simultaneously or separately the GPS report times of all vehicles or selected vehicles.
4. Support viewing the GPS details.

5. Support generating the report on the online rate of the on-board devices mounted on the selected vehicles in a specific period.
6. Support displaying simultaneously or separately the online rate of all vehicles or selected vehicles in a specific period.
7. Support viewing the online rate details.
8. Support generating the report on the driving distance of specific vehicles in a specific period.
9. Support displaying simultaneously or separately the driving distance of all vehicles or selected vehicles in a specific period.
10. Support viewing the driving distance details.
11. Support generating the report on the speeding duration of specific vehicles at a specific speed (0, 20km/h，40km/h，60km/h，80km/h) in a specific period.
12. Support displaying simultaneously or separately the driving distance of all vehicles or selected vehicles in a specific period.
13. Support viewing the driving distance details.
14. Support generating the report on the driving duration of specific vehicles at a certain speed (0km/h，20km/h，40km/h，60km/h，80km/h) in a specific period.
15. Support displaying simultaneously or separately the driving duration of all vehicles or selected vehicles in a specific period.
16. Support viewing the driving duration details.
17. Support generating the report on driving events of specific vehicles in a specific period.
18. Support displaying simultaneously or separately the number of driving events of specific vehicles in a specific period.
19. Support viewing driving event details.
20. Support generating the report on the passenger counting of specific vehicles in a specific period.
21. Support displaying simultaneously or separately the number of passengers who got on or (and) off specific vehicles in a specific period.
22. Support three types of view mode: enter, exit, and enter/exit.
23. Support calculating passenger traffic of different stops or time periods: displaying the people counting data in a specified period of different vehicles or all vehicles at the same time or separately, including passenger arriving, leaving or both.
24. Support calculating passenger traffic of different routes or time periods: displaying the people counting in a specified period of different vehicles or all vehicles at the same time or separately, including passenger arriving, leaving or both.
25. Support the following report types for the above reports: daily report, weekly report, monthly report, custom time interval.
26. Support exporting the report.

Scheduled Report

1. Support configuring sending weekly or monthly reports regularly.
2. Support sending reports regularly including driver analysis, fuel level analysis and site passenger traffic analysis report.
3. Support selecting lists of drivers to be analyzed.

4. Support setting a regular sending time.
5. Support setting the email template.
6. Support setting a report format: Excel or CSV.
7. Support producing reports in multiple languages.
8. Support uploading reports to SFTP regularly.
9. Support uploading reports to local servers regularly.

4.21.7 Historical Record Search and Exporting

1. Support searching vehicle routes by the following conditions: time, vehicle, speed range, and event type.
2. Support recording vehicle route details: time, maximum speed, minimum speed, triggered event.
3. Support searching driving events by the following conditions: time, vehicle, event type, and specified area on map.
4. Support recording driving event details: license plate No., area, time, event type, GPS information, and driving direction.
5. Support searching and exporting the routes that historical vehicles have traveled along or the routes of driving event.
6. Support exporting the route record file (in the format of Excel or CSV) and video file (in the format of MP4, or AVI).

4.21.8 Event and Alarm

1. The platform shall support receiving driving events: on-board monitoring event, driver behavior, and ADAS event.
2. The platform shall support receiving the events triggered by on-board device maintenance: On-Board Device Online, On-Board Device Offline, Video Loss, HDD Full, HDD R/W Error, Video Standard Mismatch, and Video Storage Exception.
3. The platform shall support receiving the events triggered by the alarm input of on-board device.
4. The platform shall support receiving the events triggered by the vehicle-mounted camera (the supported event type is subject to the vehicle-mounted camera).
5. The platform shall support all functions of Event & Alarm module: linkage actions configuration for the detected events and alarms, alarm monitoring, historical alarm information search, alarm & event operation analysis, etc.
6. The platform shall support batch exporting the route record files (in the format of Excel or CSV) and video file (in the format of MP4, or AVI).

4.21.9 Evidence Management

Support evidence management. Refer to ***Evidence Management*** .

4.21.10 Permission Management

1. Refer to Evidence Management for details
2. Support configuring the permission of the vehicle module: basic settings and rule configuration.
3. Support configuring the permission: on-board monitoring, vehicle search, and vehicle statistics and report.
4. Support configuring the permission of the event and alarm search of alarm input.
5. Support configuring the permission of alarm output.
6. Support health status overview according to resources: alarm input, alarm output, on-board device, and camera.
7. Support configuring the following permissions for cameras: live view, screenshot and print, video search, video export, manual video recording, two-way audio, and play audio.
8. Support configuring the camera playback permission.
9. Support playing back the video recording within a recent time period (minute/hour/day).
10. Support configuring the camera PTZ permission: PTZ configuration and operation.

4.21.11 Device Maintenance

1. The platform shall support viewing the real-time status of all devices: MVR (mobile video recorder)/DVR (digital video recorder), vehicle-mounted camera, and alarm input.
2. The platform shall support the historical online rate statistics of on-board device.
3. The platform shall support the online rate statistics of vehicle-mounted camera.
4. The platform shall support the recording integrity rate statistics of vehicle-mounted camera.
5. The platform shall support displaying device health check list on the overview page: viewing and exporting device health check details of a specific vehicle by date, filtering the health check list by vehicle, etc.
6. The platform shall support getting on-board device logs remotely.

4.22 Portable Enforcement

Basic Configuration

- The platform shall support setting the distance unit to Kilometer (km) or Mile (mi).
- The platform shall support setting GPS data retention period, including 7 days, 15 days, 30 days, 60 days, 180 days, and one year.

Device Management

- The platform shall support adding dock stations.
- The platform shall support adding portable devices.
- The platform shall support applying global parameter to portable devices: GPS reporting frequency.

- The platform shall support applying global parameter to portable devices: registration platform address.
- The platform shall support applying global parameters to portable devices: device ID and password.
- The platform shall support applying global parameter to portable devices: Wi-Fi information.
- The platform shall support applying global parameter to portable devices: whether to allow forced recording. When forced recording is enabled, the user is not allowed to turn off the recording.
- The platform shall support applying recording parameters to portable devices: video resolution and pre-record duration.
- The platform shall support batch editing passwords of multiple portable device.
- The platform shall support auto detecting portable devices on dock stations.

Person Management

- The platform shall support viewing person application overview, which displays the numbers of valid, invalid, and not configured persons.
- The platform shall support linking person to a unique portable device.
- The platform shall support importing persons from the AD domain.
- The platform shall support applying person information (which should correspond to the account information of body camera) to the dock station.
- The platform shall support managing cards, and applying card information to dock stations.
- The platform shall support managing fingerprints. The platform shall support applying fingerprint information to dock stations.
- The platform shall support managing profiles and applying profiles to dock stations.
- The platform shall support filtering according to applying status. The platform shall support displaying users failed to be applied and reapplying them.

Real-Time Monitoring

- The platform shall support monitoring related operations on the page which includes person list, Google map, live view window, and dock station related events.
- The platform shall support disabling the GIS map for the Real-Time Monitoring page.
- The platform shall support displaying the numbers of all persons and located persons. The platform shall support switching to the online/located person list.
- The platform shall support searching for persons.
- The platform shall support locating a person on the map or drawing an area on the map to locate persons.
- The platform shall support playing back person's track on the map.
- The platform shall support two-way audio with the person.
- The platform shall support batch selecting persons and broadcasting to them.
- The platform shall support locating body cameras on Google map. The platform shall support locating body cameras in a specified area.
- The platform shall support live view, playback, and two-way audio for body cameras.
- The platform shall support receiving panic alarms from portable devices.

File Management

- The platform shall support storing alarm-triggered recordings on portable devices.
- The platform shall support streaming from portable devices and storing recordings in center storage.
- The platform shall support backing up all files (pictures, audios, and videos included) on the portable devices to the central system.
- The platform shall support backing up tagged files (pictures, audios, and videos included) on the portable devices to the central system.

File Search

- The platform shall support searching for files by time, dock station group, file format (video, picture, and audio).
- The platform shall support searching for files on portable devices by file types (important or unimportant).
- The platform shall support searching for files by portable device.
- The platform shall support searching for files on portable devices by persons.
- The platform shall support exporting searched files, and saving video to evidence.
- The platform shall support searching for videos for GPS track playback.
- The platform shall support configuring visible channels according to areas for users in the situation of multiple managers.

Track Search

The platform shall support searching for tracks by selecting persons.

Group Intercom

The platform shall support adding the group intercom function: creating group, configuring streaming server, and applying to device.

Record Search

- The platform shall support searching for detailed receiving records of portable devices by device with search conditions including receiving time and return status.
- The platform shall support searching for detailed receiving records of portable devices by receiving time, return status, and device.
- The platform shall support displaying the details of each record, including person, department, device name, record statistics, receiving time, return time, duration of use, total generated files, video length, receiving details, file information, and battery when receiving/returning.

Network Security

- The platform shall support adding HTTPS mode for IP access.
- The platform shall support realizing AES256 encryption for portable device pictures.
- The platform shall support realizing video stream encryption directly by streaming from portable device.

4.23 Intelligent Analysis Report

Retail/Supermarket Scenario

Public Scenario

4.23.1 Switch Scenario

Switch Scenario

1. The platform shall support public scenario and retail/supermarket scenario.
2. The platform shall support viewing reports collected from an analysis group or camera in the public scenario.
3. The platform shall support viewing reports of a single store or multiple stores.

4.23.2 Store Management

Store Management

1. The platform shall support adding stores to the platform including setting the store name, selecting an area for the store, setting the business hours, setting the store location, and configuring the store floor(s).
2. The platform shall supports multiple floor configuration including configuring the floor location and adding resources to each floor.
3. The platform shall support configuring opening hours for stores.
4. The platform shall support configuring multiple promotion days.

Resource Ability Test

1. The platform shall support ability test of people counting resources. The platform shall support displaying whether to enable algorithm, whether to enable the feature, whether to enable upload data, people statistics in last hour, and remote configuration.
2. The platform shall support ability test of heat analysis resources. The platform shall support displaying whether to enable algorithm, whether to enable the feature, whether to enable uploading data, people statistics in last hour, and remote configuration.
3. The platform shall support camera ability test. The platform shall support displaying whether to enable algorithm, whether to enable the feature, whether to enable uploading data, and remote operation.
4. The platform shall support test of other camera abilities. The platform shall support exporting reports of person features, heat analysis, pathway analysis, and queue analysis.
5. The platform shall supports ability test of people counting camera and exporting reports by hour.

Store People Counting

1. The platform shall support adding people counting resources to the store and configure people counting (passby), people counting (in), and foot traffic (in+passby).
2. The platform shall support linking entries and exits with cameras.
3. The platform shall support adding entries and exits for people counting configuration.
4. The platform shall support configuring Store Capacity Limit to get notified when the number of people in the store exceeds the limit.
5. The platform shall support configuring Regularly Clear All to have all data cleared at the set time.
6. The platform shall support configuring who will be excluded when counting people (for staff).
7. The platform shall support configuring the location of entries and exits on the map.
8. The platform shall support adding the same camera to multiple entrances and exits of a store.

Store Pathway Analysis

The platform shall support adding a camera to a static map and set its pathways and directions on the map.

Store Heat Analysis

The platform shall support configuring a camera with heat map rules for a required area.

4.23.3 Dashboard for Retail/Supermarket Scenario

General

1. The platform shall support displaying the statistics of multiple stores on the dashboard.
2. The platform shall support displaying the dashboard information by Day / Week / Month / Year / Promotion Day / Custom.

Report Contents

The platform shall support displaying contents including people counting, walk-in rate, and average waiting time.

Rankings

1. The platform shall support displaying the stores with top/bottom 5 people counting.
2. The platform shall support displaying the stores with top/bottom 5 walk-in rate.
3. The platform shall support displaying the stores with top/bottom 5 average waiting time.
4. The platform shall support displaying the heat areas with top/bottom 5 people counting.

People Counting Trend

The platform shall support displaying the trend and cycle on cycle comparison of people counting, foot traffic, and walk-in rate.

Overall Distribution

1. The platform shall support displaying the person feature analysis in pie chart.
2. The platform shall support displaying the GPS location of all stores.

4.23.4 Single-Store Report

General

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support customizing contents displayed in the report.
3. The platform shall support exporting single-store report with customized report contents.
4. The platform shall support exporting reports as scheduled.

Report Contents

1. The platform shall support displaying the current number, the peak number, the date of the peak number, and the cycle on cycle statistics of foot traffic (in+passby), people counting (in), and walk-in rate.
2. The platform shall support displaying the dwell people quantity per hour for daily report.
3. The platform shall support displaying the current value, cycle on cycle statistics, and the number of queue alarms times of the average waiting time.
4. The platform shall support displaying the rankings of foot traffic (in+passby), people counting (in), and walk-in rate among all stores.
5. The platform shall support displaying the number of store overcapacity times.
6. The platform shall support displaying the area with top 1 dwell rate.

Person Features

The platform shall support displaying the person feature analysis in pie chart.

People Counting

1. The platform shall support displaying the people counting trend by people counting (in), foot traffic (in+passby), and walk-in rate. The platform shall also support displaying the number of entries and exits.
2. The platform shall support displaying the number of people at every entry & exit and the location of entry &exit on each floor.
3. The platform shall support displaying the rankings of all entry & exit and people counting statistics in a specific time period.
4. The platform shall support displaying the flow directions of each entrance/exit.

Heat Analysis

1. The platform shall support switching heat areas and switching heat map color representation mode.
2. The platform shall support displaying the heat map by floor.
3. The platform shall support displaying the total people, total dwell people, dwell rate, and average dwell duration of a specific floor in a heat area.
4. The platform shall support displaying the rankings of all heat areas.
5. The platform shall support specifying how long will be considered as dwell for dwell rate: >15s, >30s, >60s, >300s.

Pathway Analysis

The platform shall support displaying all pathways by floor and people counting information for each pathway.

Queue Analysis

1. The platform shall support displaying the statistics of alarm times including the waiting overtime times and queue overcapacity times.
2. The platform shall support displaying the current number and cycle on cycle statistics of alarm times.
3. The platform shall support displaying the distribution percentage of the set statistic range of waiting time. The platform shall support displaying the corresponding trend diagram.
4. The platform shall support displaying the distribution percentage of the set number of queuing people. The platform shall support displaying the corresponding trend diagram.
5. The platform shall support setting the statistic range of waiting time and number of queuing people.

4.23.5 Multiple-Store Report

General

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support selecting multiple stores and export a multiple-store report.
3. The platform shall support customizing contents displayed in the report.
4. The platform shall support exporting multiple-store report with customized report contents.
5. The platform shall support exporting reports as scheduled.

Report Contents

1. The platform shall support displaying the current number, the peak number, the date of the peak number, and the cycle on cycle statistics of foot traffic (in+passby), people counting (in), and walk-in rate.
2. The platform shall support displaying the current value, cycle on cycle statistics, and the number of queue alarms times of the average waiting time.
3. The platform shall support displaying the area with top 1 dwell rate.
4. The platform shall support displaying the stores with top/bottom 1 people counting (in).
5. The platform shall support displaying the store with top 1 increase in people counting (in).
6. The platform shall support displaying the store with top 1 decrease in people counting (in).
7. The platform shall support displaying the store with top/bottom 1 foot traffic (in+passby).
8. The platform shall support displaying the store with top 1 increase in foot traffic (in+passby).
9. The platform shall support displaying the store with top 1 decrease in foot traffic (in+passby).
10. The platform shall supports displaying the store with top/bottom 1 walk-in rate.
11. The platform shall support displaying the store with top 1 increase in walk-in rate.
12. The platform shall support displaying the store with top 1 decrease in walk-in rate.
13. The platform shall support displaying the store with top/bottom 1 dwell rate.
14. The platform shall support displaying the store with top 1 increase in dwell rate.
15. The platform shall support displaying the store with top 1 decrease in dwell rate.

People Counting Rankings and Trends

1. The platform shall support ranking all selected stores by people counting .
2. The platform shall support ranking stores by people counting (in), foot traffic (in+passby), walk-in rate, and average waiting time.
3. The platform shall support sorting stores by these items and displaying the cycle on cycle statistics.
4. The platform shall support displaying the people counting trend by people counting (in), foot traffic (in+passby), and walk-in rate.
5. The platform shall support displaying the people counting trend by people counting (out) for daily report only.

Heat Area Rankings

1. The platform shall support ranking heat areas for all selected stores.
2. The platform shall support ranking heat areas by total dwell people, total people, dwell rate, and average dwell duration.

4.23.6 Two-Store Comparison Report

General

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support exporting a comparison report of two selected stores.
3. The platform shall support exporting reports as scheduled.

People Counting Rankings

The platform shall support ranking stores by people counting (in), foot traffic (in+passby), walk-in rate, and average waiting time.

4.23.7 Promotion Day Report

Promotion Day

The platform shall support selecting a promotion day for generating a report of selected store(s) on that day.

Report Contents

The platform shall support displaying the current number, the peak number, the date of the peak number, and the cycle on cycle statistics of foot traffic (in+passby), people counting (in), and walk-in rate.

People Counting Rankings

1. The platform shall support ranking stores by people counting (in), foot traffic (in+passby), walk-in rate, and average waiting time.
2. The platform shall support sorting stores by these items and displaying the cycle on cycle statistics.

People Counting Trends

1. The platform shall support displaying the people counting trend by people counting (in), foot traffic (in+passby), and walk-in rate.
2. The platform shall support displaying the daily trend before and after the promotion day, or the hourly trend on the promotion day.

Report Export

The platform shall support exporting the store promotion day report.

4.23.8 Analysis Center

Report Target

1. The platform shall support selecting store / entry & exit / camera as the report target for people counting.
2. The platform shall support selecting store/camera as the report target for person feature analysis. The report content shall be the same with a single store report.
3. The platform shall support selecting store/camera as the report target for heat analysis.
4. The platform shall support selecting store as the report target for pathway analysis.
5. The platform shall support selecting store/camera as the report target for queue analysis. The report content shall be the same with a single store report if you select camera as the report target; the report content only includes alarm times if you select store as the report target.

4.23.9 Dashboard

Dashboard Configuration

1. The platform shall support customizing the reports to be displayed on the dashboard, including People Counting, People Density Analysis, Heat Analysis, Queue Analysis, Pathway Analysis, Person Feature Analysis, Skin-Surface Temperature, Temperature Analysis, and Vehicle Analysis.
2. The platform shall support configuring the analysis type: via resource group or via channel.

Dashboard Display

1. The platform shall support switching the viewing time. The platform shall support editing the report type and time.
2. The platform shall support manually refreshing the report contents.
3. The platform shall support exporting the report contents on the dashboard.

Data Exporting

1. The platform shall support exporting report(s) in Dashboard.
2. The platform shall support selecting the report name to export the report.
3. The platform shall support exporting the report in the file format of Excel, CSV, and PDF.

4.23.10 Scheduled Report

1. The platform shall support configuring the daily, weekly, or monthly scheduled report.
2. The platform shall support configuring the sending time for scheduled report.
3. The platform shall support configuring the email template for scheduled report.
4. The platform shall support selecting the report language.
5. The platform shall support uploading scheduled Event & Alarm report to SFTP server.
6. The platform shall support uploading scheduled Event & Alarm report backup to local storage.

4.23.11 Multi-Target-Type

Report Display and Export

1. The platform shall support generating multi-target-type analysis report, display information including the number of persons, motor vehicles, and non-motor vehicles within a specified period.
2. The platform shall support viewing the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval. View report statistics by hour, day, and month.
3. The platform shall support exporting report in PDF, EXCEL, or CSV format.

4.23.12 People Counting

People Counting Group

1. The platform shall support selecting multiple cameras and card readers of the selected doors as the statistics resource.
2. The platform shall support configuring entry and exit direction for resources in the people counting group.

3. The platform shall support setting a time for regularly clearing all people counting data.
4. The platform shall support enabling maximum capacity and configuring the maximum number of persons allowed to enter.

Event and Alarm

The platform shall support configuring person amount more than threshold alarm and person amount more than threshold pre-alarm for the selected people counting group.

Real-Time Monitoring

1. The platform shall support real-time monitoring of the selected people counting group(s). The platform shall support viewing the live view of multiple people counting groups simultaneously.
2. The platform shall support viewing the number of remained persons in the people counting group and the number of persons allowed to enter.
3. The platform shall support manually correcting the data of people counting groups.
4. The platform shall support configuring bilingual display for people counting groups.

Report Display and Exporting

1. The platform shall support displaying the analysis results by camera(s) or by people counting group(s).
2. The platform shall support ranking resource groups and cameras according to the number of people entered and the number of people exited.
3. The platform shall support setting the direction as Entering, Exiting, or Entering & Exiting for statistics analysis.
4. The platform shall support displaying number of people entered, people passed by, and walk-in rate.
5. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
6. The platform shall support displaying statistics comparison with yesterday, the previous week, the previous month, the previous year, and customized time.
7. The platform shall support displaying the peak of total people by different dimensions.
8. The platform shall support exporting the report.

4.23.13 Person Feature Analysis

Person Feature Analysis Group

1. The platform shall support adding and managing person feature analysis groups.
2. The platform shall support displaying the analysis results by camera(s) or by person feature analysis group(s).

Report Display and Exporting

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support selecting the statistics content by time.
3. The platform shall support displaying the analysis results in pie chart.
4. The platform shall support exporting the report.

4.23.14 Heat Analysis

Heat Analysis Group

1. The platform shall support selecting multiple cameras and card readers of the selected doors as the people counting resource.
2. The platform shall support setting the direction as Entering or Exiting for resources in the group.
3. The platform shall support selecting multiple cameras as the statistics resource for heat analysis.

Report Display and Exporting

1. The platform shall support displaying the analysis result by cameras or by people counting groups.
2. The platform shall support ranking among resource groups and cameras according to people counting, average dwell time, number of dwell people, and dwell rate.
3. The platform shall support three statistics types: dwell time, people amount, and average dwell time.
4. The platform shall support setting how long will be considered as dwell for dwell rate: >0s, >15s, >30s, >60s.
5. The platform shall support displaying global heat map. The platform shall support linking multiple cameras with a map.
6. The platform shall support displaying different colors for regions of different heat on the map. The platform shall support viewing the heat map of a camera. The image of the camera is color coded.
7. The platform shall support displaying statistics compared with yesterday, the previous week, the previous month, the previous year, the previous promotion day, and customized time.
8. The platform shall support displaying the peak moment of people count, dwell time, and dwell rate.
9. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
10. The platform shall support exporting the report.

4.23.15 Pathway Analysis

Pathway Analysis Group

The platform shall support adding multiple cameras onto the map and setting the their locations on the map.

Report Display and Exporting

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support selecting the statistics content by time.
3. The platform shall support displaying the analysis results on the map, including the heat color of each pathway and the number of persons on each pathway.
4. The platform shall support exporting the report.

4.23.16 Queue Analysis

1. The platform shall support the following report types: Daily Report, Weekly Report, and Annual Report.
2. The platform shall support selecting the statistics content by time.
3. The platform shall support two analysis types including waiting duration and queue length.
4. The platform shall support displaying the number of exceptions (waiting timeout).
5. The platform shall support displaying the waiting duration for the queues with different numbers of persons (queue length).
6. The platform shall support displaying the number of exceptions (people amount exceeding).
7. The platform shall support displaying the people counting statistics of different waiting duration.
8. The platform shall support exporting the report.

4.23.17 People Density Analysis

Report Display and Export

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support displaying the analysis in line chart.
3. The platform shall support exporting the analysis report.

4.23.18 Temperature Analysis

1. The platform shall support the following report types: Daily Report, Weekly Report, Monthly Report, Annual Report, and Custom Time Interval.
2. The platform shall support selecting Hour for daily report. The platform shall support displaying the highest and lowest temperature of the specific temperature screening point in one minute.

3. The platform shall support displaying the number of temperature exception of presets.
4. The platform shall support comparing the highest temperature among multiple temperature screening points.
5. The platform shall support comparing the lowest temperature among multiple temperature screening points.
6. The platform shall support exporting the report.

4.23.19 Troubleshooting

Troubleshooting

1. The platform shall support camera ability test. The platform shall support displaying whether to enable algorithm, whether to enable the feature, whether to enable uploading data, and remote operation.
2. The platform shall support test of other camera abilities. The platform shall support exporting reports of person features, heat analysis, pathway analysis, queue analysis, and temperature analysis.
3. The platform shall supports ability test of people counting camera and exporting reports by hour.

4.24 Time and Attendance

- ***Attendance Wizard***
- ***Attendance Rules***
- ***Leave Management***
- ***Attendance Reports***
- ***Attendance System Operation***
- ***Employee Self-Service***
- ***Check-In&Check-Out via Mobile Client***
- ***Third-Party Integration***

4.24.1 Attendance Wizard

Provide guidance to help the user set up an attendance system.

4.24.2 Attendance Rules

Attendance Group

1. The platform shall support adding, deleting, and editing attendance groups.
2. The platform shall support adding persons to attendance groups.

Attendance Rule

1. The platform shall support configuring global and department attendance rules.
2. The platform shall support configuring group attendance rules.
3. The platform shall support setting the day change time.
4. The platform shall support adding pay codes.
5. The platform shall support editing fixed codes.

Break Timetable

1. The platform shall support adding break timetables.
2. The platform shall support setting a fixed break duration or calculating the break duration by actual check-in/out interval.
3. The platform shall support marking early return as overtime (level 1/2/3).
4. The platform shall support marking late return as normal, late, early leave, or absence duration.
5. The platform shall support calculating the break duration by the interval of the first and last check-in/out or the interval of each check-in/out.
6. The platform shall support enabling the attendance status on attendance check devices.
7. The platform shall support counting early or late return time by time point.
8. The platform shall support counting early or late return time by duration.

Timetable

1. The platform shall support adding work timetables.
2. The platform shall support adding normal timetables and set the flexible mode to Allow Late Arrival/Early Leave or Flexible Period.
3. The platform shall support adding flexible timetables.
4. The timetable shall support setting a valid check-in period and valid check-out period exceeding 24 hours.
5. The platform shall support setting the valid check-in/out period spanning 4 consecutive days.
6. The platform shall support adding multiple break timetables to one timetable.
7. The platform shall support timetable overview.
8. The platform shall support setting a dedicated absence rule for a timetable, whose priority is higher than the global absence rule. The platform shall support marking late check-in and early check-out as absent. The platform shall support marking no check-in or check-out as absent or late.
9. The platform shall support calculating the work hours by the interval of the first and last check-in/out or the interval of each check-in/out.
10. The platform shall support enabling the attendance status on attendance check devices.
11. The platform shall support configuring the latest check-in time.
12. The platform shall support viewing the changes of the timeline when configuring the timetable.

13. The platform shall support configuring timetables following the tabs, including Basic Settings, Break Period, Overtime, and Attendance Calculation.
14. The platform shall support configuring the break duration exceeding which the break duration will be excluded from work hours.

Shift

1. The platform shall support adding shifts.
2. The platform shall support setting the shift's repeating pattern: By Week (1 to 52 weeks), By Day (1 to 31 days), and By Month (1 to 12 months).
3. The platform shall support set the repeat cycle to week or day.
4. The platform shall simplify the shift management by deleting calculation mode and overtime rule.
5. The platform shall selecting both normal timetable and flexible timetable for one shift.
6. The platform shall support calculating the work hours by the interval of the first and last check-in/out or the interval of each check-in/out.
7. The platform shall support enabling the attendance status on attendance check devices.
8. The platform shall support setting a dedicated overtime rule for a shift, whose priority is higher than the global overtime rule. The platform shall support setting the work hour rate of each overtime level, overtime calculation rule on workdays, overtime rule on holidays, and whether to calculate the overtime that is not in valid attendance check period.
9. The platform shall support setting holidays for a shift. Attendance check will be disabled on holidays.
10. The platform shall support displaying multiple shifts of a person in the Schedule Overview module.
11. The platform shall support configuring different effective periods for different schedules when assigning schedules by person or department.

Schedule

1. The platform shall support schedule overview.
2. The platform shall support viewing schedule overview by month and week.
3. The platform shall support assigning a schedule to departments.
4. The platform shall support assigning a schedule to persons.
5. The platform shall support assigning a temporary schedule to persons in different departments.
6. The platform shall support assigning a schedule to attendance groups.
7. The platform shall support setting the effective period, whether to require check-in/out, and whether overtime is effective when assigning a schedule.
8. The platform shall support adding multiple shifts to a schedule.
9. The platform shall support linking a schedule to attendance check points.
10. The platform shall support quickly configuring temporary schedules on the calendar.
11. The platform shall support selecting timetables for the temporary schedules.
12. The platform shall support quickly configuring schedules and using different colors to mark different schedules on the calendar.

Global Overtime Rule

1. The platform shall support setting the work hour rate for 3 overtime levels.
2. The platform shall support setting the overtime rule on workdays. The platform shall support setting the overtime calculation mode to ""By Total Work Hour"" or ""By Time Points""
   - By Total Work Hour - Count the extra work hours as overtime. The platform shall support setting the overtime duration calculation mode to ""Fixed"" or ""Actual"".
   - By Time Points - Count early check-in or late check-out as overtime. The platform shall support setting the duration calculation mode."
3. The platform shall support setting the overtime rule on weekends by defining a daily threshold for valid overtime calculation.
4. The platform shall support setting the overtime rule on holidays. The platform shall support setting a daily threshold for valid overtime calculation, the maximum limit for overtime, and the overtime level for each holiday.
5. The platform shall support setting whether to calculate the overtime that is not in valid attendance check period.
6. The platform shall support two digits after the decimal point when setting the work hour rate.

Global Absence Rule

1. The platform shall support marking the late check-in as absent and setting the threshold.
2. The platform shall support marking the early check-out as absent and setting the threshold.
3. The platform shall support marking no check-in as absent or late.
4. The platform shall support marking no check-out as absent or late.

Attendance Result Accuracy

1. The platform shall support setting the minimum unit, rounding, and display format of the duration of each attendance status.
2. The platform shall support calculating attendance by second.

Attendance Check Point

1. The platform shall support checking attendance via all devices on the platform by default.
2. The platform shall support setting any access point as the attendance check point. The platform shall support setting the attendance check point type to Check-In & Out, Check-In Only, or Check-Out Only.
3. The platform shall support setting any card reader of a door as the attendance check point. The platform shall support setting the attendance check point type to Check-In & Out, Check-In Only, or Check-Out Only.

Customization

1. The platform shall support setting any days of the week as the weekends.
2. The platform shall support setting the attendance authentication mode to card, fingerprint, and/or face.

3. The platform shall support customizing the leave types.
4. The platform shall support setting the attendance mode on attendance check devices to Manual, Automatic, and Manual And Auto.
5. The platform shall support customizing the attendance status name displayed on attendance check devices, including check-in/out name, break start/end name, and overtime start/end name.
6. The platform shall support setting the time periods of each attendance status on the attendance check devices when the attendance mode is Automatic and Manual & Auto.

4.24.3 Leave Management

1. The platform shall support configuring different leave types.
2. The platform shall support configuring leave rules.
3. The platform shall support assigning different leave rules to persons.
4. The platform shall support automatically deduct remaining days of leave according to employees' leave applications.

4.24.4 Attendance Reports

Predefined Attendance Reports

1. Support 4 types of attendance reports (Daily Report, Weekly Report, Monthly Report, and Summary Report), and 37 kinds of reports under these 4 types totally.
2. For Attendance Record, the platform shall support Transaction, Time Card, Check In&Out Record, First&Last Access Report, Leave Record, Overtime Record, and Check In&Out Correction Report.
3. For Daily Report, the platform shall support Total Time Card, Worked Hrs, Overtime Report, Leave Report, Late Report, Early Leave Report, Absent Report, Exception Report, and Multiple Break Time.
4. For Weekly Report, the platform shall support Weekly Details, Weekly Worked Hrs, and Weekly Overtime.
5. For Monthly Report, the platform shall support Monthly Details, Monthly Status, Monthly Worked Hrs, Monthly Overtime, Monthly Break Time, Monthly Check In&Out, Monthly Absent, Monthly Late, and Monthly Early Leave.
6. For Summary Report, the platform shall support Person Attendance Summary, Person Overtime Summary, Person Leave Summary, Department Attendance Summary, Department Overtime Summary, Person Attendance Overview, Person Attendance Details, and Person Attendance Statistics.
7. Support previewing all types of reports.
8. Support automatically adopting the most adaptive size and direction of the paper for report printing.
9. Support customizing the size and the direction of the paper for report printing.

Report Template Customization

1. Support customizing new report templates from the predefined reports.
2. Support customizing the fields, order, and sorting order of the customized reports.
3. Support selecting all the available fields when customizing reports.
4. Support merging the data of the same person/department/date. Support setting the sorting rule for records such as sorting in ascending order of person ID.
5. Support previewing the customized reports.
6. Support customizing up to 512 reports based on predefined attendance reports and the Optional Fileds available in Custom Report module.

Report Exporting

1. Support generating attendance reports of specific persons (including resigned and employed) or departments.
2. The platform shall support sending attendance report of specified attendance groups according to a schedule.
3. Support exporting in PDF, Excel, and CSV format.
4. If you select PDF as the format of the report, support printing the report according to the selected paper size and the printing direction. If you select Self-Adapt to Paper Based on Content, support automatically specifying a paper size according to the selected report type, and the specified paper size shall show in the brackets behind Self-Adapt to Paper Based on Content.
5. Support exporting attendance reports by different calculating dimensions (by person, department, date, or default), and exporting them in PDF, Excel, and CSV formats.
6. Support encrypting the exported report files.

Report Display Customization

1. Support adding company logo to reports.
2. Support setting the format of date and time.
3. Support setting the abbreviation and color of each attendance status.

4.24.5 Attendance System Operation

Dashboard

1. The platform shall support checking the abnormal attendance statistics (absent, late, early leave, late and early leave) of the current day, previous day, current week, last week, current month, and last month, last 3 months, last 6 months, current year, and customized time period. The platform shall support exporting the statistic chart as a PDF, PNG, or JPG file.
2. The platform shall support checking the attendance status statistics (normal and absent) of the current day, previous day, current week, last week, current month, and last month, last 3

months, last 6 months, current year, and customized time period. The platform shall support exporting the statistic chart as a PDF, PNG, or JPG file.
3. The platform shall support checking the overall work hours/overtime statistics of the current day, previous day, current week, last week, current month, and last month, last 3 months, last 6 months, current year, and customized time period. The platform shall support exporting the statistic chart as a PDF, PNG, or JPG file.

Automatic Attendance Calculation

1. The platform shall support calculating the attendance results of the previous day at 4:00 AM. The platform shall support changing the auto calculation time.
2. The platform shall support setting the time of recalculating historical attendance data.

Manual Attendance Calculation

The platform shall support calculating the attendance results of any specific persons during a specific time period manually.

Transaction Management

1. The platform shall support searching and listing all transactions.
2. The platform shall support exporting transactions in PDF, Excel, or CSV format.
3. The platform shall support customizing the data items, item order, and record sorting order when exporting records.

Attendance Calculation Results

1. The platform shall support listing all attendance calculation results.
2. The platform shall support sorting the attendance calculation results according to person ID or date.
3. The platform shall support hiding or showing specific data items of attendance records.
4. The platform shall support exporting attendance records in PDF, Excel, or CSV format.
5. The platform shall support customizing the data items, item order, and record sorting order when exporting records.
6. The platform shall support searching attendance records by time, including today, current week, current month, this year, yesterday, last 7 days, last week, previous month, last 3 months, last 6 months, last year, or custom.

Attendance Record Integrity

1. The platform shall support getting the lost entry & exit records from devices automatically.
2. The platform shall support importing all entry & exit records in a specific time range from devices manually.
3. The platform shall support importing the device-exported entry & exit records (files) from the local PC manually.

Exception Attendance Handling

- The platform shall support submitting applications for employees to handle exception attendance (leave, overtime, and check-in/check-out correction.
- The platform shall support reviewing exception attendance applications according to configured application flows.

Auto Sending Attendance Reports via Email

1. The platform shall support setting report schedules to send predefined reports or customized reports via email.
2. The platform shall support customizing email templates.
3. The platform shall support selecting the report language.
4. The platform shall support setting the statistics cycle: By Day (select one or multiple days from Monday to Sunday), By Week (select one day from Monday to Sunday), or By Month (select any day from the first day of the month to the last day of the month).
5. The platform shall support sending the attendance report to the recipients automatically.
6. The platform shall support generating reports in the following formats: PDF, Excel, CSV, and TXT.
7. When the report format is PDF, the platform shall support customizing the paper size and printing direction.

4.24.6 Employee Self-Service

Employee Self-Service

- The platform shall support the administrator in setting the employee self-service password, which is the employee ID by default.
- The platform shall support employees in logging in to the platform via Web Client and the Mobile Client.
- The platform shall support self-service dashboards for employees.
- The platform shall support searching for personal attendance results, status, and reports.
- The platform shall support submitting applications for the exception attendance (leave, overtime, check-in/check-out correction).
- The platform shall support searching for an application and viewing the approval flow status.
- The platform shall support self-undoing the submitted application.
- The platform shall support reviewing (approving or rejecting) or undoing the exception attendance application (this function is only valid for reviewers).
- The platform shall support employees in changing login passwords.
- The platform shall support employees changing security questions.
- The platform shall support employees submitting applications for leave.
- The platform shall support employees searching for remaining days of leave.

Approval Flow Management

- The platform shall support customizing approval roles.
- The platform shall support customizing approval flows.

4.24.7 Check-In&Check-Out via Mobile Client

1. The platform shall support HR configuring valid check-in/out scope on the GIS map. Support selecting a location and setting the Max. radius.
2. The platform shall support HR enabling and disabling Taking Photo Required.
3. The platform shall support HR enabling or disabling check-in&check-out via Mobile Client for a single person or multiple persons.
4. The platform shall support assigning different check-in/out areas by persons, departments, and attendance groups.
5. The platform shall support HR adding an approval flow for attendance groups.
6. The platform shall support HR viewing all to-be-reviewed applications for check-in&check-out via Mobile Client.
7. The platform shall support employees checking in&out via Mobile Client.
8. The platform shall support employees viewing all records of current day's check-in&check-out via Mobile Client.
9. The platform shall support admins approving or rejecting employees' applications for check-in&check-out via Mobile Client.
10. When an approval flow of check-in&check-out via Mobile Client ends, the platform shall support calculating attendance results automatically.

4.24.8 Third-Party Integration

Integration via Intermediate Files

1. The platform shall support exporting entry & exit records to the local PC as CSV or TXT files.
2. The platform shall support exporting entry & exit records to the SFTP service as CSV or TXT files.
3. The platform shall support customizing the fields and data format to be included in the exported file.
4. The platform shall support customizing the file name.
5. The platform shall support adding date and time information in the file name.
6. The platform shall support setting the frequency and time of file export.
7. The platform shall support setting the length and complementing method of person ID.
8. The platform shall support setting the length and complementing method of card number.
9. The platform shall support setting whether to overwrite the exported files.

Integration via Database

1. The platform shall support writing the entry & exit records into third-party database such as PostgreSQL, MS SQL Server, MySQL, and Oracle in real time.
2. The platform shall support setting the mapping between the data fields of the platform and those of the third-party database.
3. The platform shall support setting the direction as Enter or Exit.
4. The platform shall support setting the data writing format.
5. The platform shall support showing the third-party database synchronization status in real time.
6. The platform shall support entering the server IP address or domain name in third-party database synchronization.
7. The platform shall support pushing multi-character data to the third-party database.
8. The platform shall support sending person additional information if you have configured the additional information.
9. The platform shall support configuring the time interval of sending records failed to be pushed.
10. The platform shall support diagnosing the reason of data transmission failure, displaying the reason and data failed to be transmitted.

4.25 Patrol Management

4.25.1 Basic Configuration

Basic Parameter Configuration

1. The platform shall support configuring the types of exceptions for patrol persons to report via Mobile Client.
2. The platform shall support configuring the storage location for storing attachments uploaded during patrols.
3. The platform shall support configuring the time of advance notification for reminding patrol persons before patrols start.
4. The platform shall support setting a time between 20 and 60 minutes.

Patrol Point Configuration

1. The platform shall support configuring up to 1,024 patrol points.
2. The platform shall support setting the following types of devices as patrol points: face recognition terminal, access control terminal, and door station.
3. The platform shall support linking up to 4 cameras to each patrol point, which can be general network cameras or cameras of access control devices.

GPS Verification for QR Code Patrol

1. The platform shall support configuring patrol points of QR code type.
2. The platform shall support configuring valid patrol scopes for patrol points of QR code type based on the GIS map.
3. The platform shall support uploading the actual patrol locations (GPS coordinates) to the platform when patrol persons scan the QR codes of patrol points.
4. The platform shall support pushing alarms to Alarm Center when the actual patrol location and the valid patrol scope do not match.

Patrol Person Group Configuration

1. The platform shall support configuring up to 300 patrol person groups.
2. The platform shall support forming patrol person groups with one or multiple persons.
3. The platform shall support setting the patrol mode of a patrol person group to "Any Person in the Group" or "All Persons in the Group".
   Any Person in the Group - Any person in the group shall be able to check in at the patrol point to perform the patrol.
   All Persons in the Group - All persons in the group shall check in at the patrol point to perform the patrol.

Schedule Template Configuration

1. The platform shall support configuring schedule templates and setting the related parameters, including the template name, time range, and the repeat cycle for patrol scheduling.
2. The platform shall support setting the repeat cycle to "Every Day", "Every Week" (on selected days of a week), or "Every Month" (on selected dates of a month).

4.25.2 Patrol Configuration

Patrol Route Configuration

The platform shall support configuring patrol routes based on e-maps.

Patrol Task Configuration

1. The platform shall support configuring patrol tasks by setting the following parameters: route name, patrol person or person group, schedule template, patrol duration, patrol points, patrol pattern (e.g., in order, no order, first point first, last point last, first point first and last point last), shift schedules, whether to start the patrol immediately, and the time for advance notification.
2. The platform shall support displaying patrol route information in a visualized way (in calendars or lists). The platform shall support displaying the status of each patrol route (e.g., not started, on patrol, not enabled).

Patrol Task Reminder

The platform shall support reminding patrol persons before patrols start by pushing advance notifications to the Mobile Client.

4.25.3 Real-Time Patrol Monitoring

Real-Time Monitoring

1. The platform shall support monitoring the patrol route status in real time.
2. The platform shall support monitoring the status of shift schedules in real time.
3. The platform shall support monitoring the status of patrol points in real time.
4. The platform shall support viewing detailed information of the actual/planned patrol person of a patrol point in real time.
5. The platform shall support monitoring the patrol status in real time via lists or e-maps.
6. The platform shall support viewing the live view of cameras linked to a patrol point and enabling video recording (supported on Web Client, Control Client, and Mobile Client).
7. The platform shall support manually starting or postponing a shift.

Dashboard

1. The platform shall support displaying the patrol shifts scheduled for the current day with information such as the patrol route, patrol start time, and related patrol person / patrol person group.
2. The platform shall support displaying the statistics of patrol route status of the current day, i.e., the percentages of patrol routes with different status (e.g., normal patrol, omitted patrol, substitute patrol, etc.).

4.25.4 Exception Management

Exception Reporting

The platform shall support reporting exceptions occurred during patrols via Mobile Client; the reported content includes exception description, patrol point information, and related pictures and videos.

Patrol-Related Alarm

1. The platform shall support the following patrol events: normal patrol, early patrol, late patrol, supplemented patrol, and omitted patrol.
2. The platform shall support triggering linkage actions for exceptions occurred during patrols, such as triggering alarms, recording videos, and automatically sending emails.
3. The platform shall support triggering pop-up windows of alarms, which contain the following information: event type, event description, shift schedule, patrol point, planned patrol person,

scheduled patrol period, actual patrol time, and live view of the linked camera(s) (support enabling video recording).
4. The platform shall support displaying alarm information during real-time patrol monitoring (via map or list).

4.25.5 Patrol Statistics and Event Record Search

Patrol Statistics and Report

1. The platform shall support checking and exporting patrol status statistics of patrol routes. The platform shall support filtering the statistics by specifying a time range.
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2. The platform shall support checking and exporting patrol status statistics of patrol points. The platform shall support filtering the statistics by specifying a time range.
3. The platform shall support checking and exporting patrol status statistics of patrol persons. The platform shall support filtering the statistics by specifying a time range.

Patrol Event Search

The platform shall support searching for patrol events and exporting the event records.

4.26 Commercial Display

4.26.1 Overview

Centralized Device Control

1. The platform support viewing the device status and offline devices.
2. The platform support viewing and executing the combined control command.
3. The platform support viewing the flat panel usage of the current week.

Information Release

1. The platform support viewing and hiding the wizard which includes the operation wizards of adding devices, uploading materials, creating programs, releasing schedules, controlling terminals, etc.
2. The platform support providing a guidance for quick release.
3. The platform support providing a guidance for content release by template.
4. The platform support viewing the usage of resource pool and material library.

4.26.2 Device Control

1. The platform shall support starting up/shutting down/rebooting, playing/stopping, cutting in message, stopping cut-in message/stopping message, clearing content on terminal, enabling/disabling timed startup/shutdown, etc.
2. The platform shall support creating combined control commands and applying them to multiple devices.

4.26.3 Content Management

Quick Release

The platform shall support uploading pictures or videos from the local PC and quickly applying them to the devices.

Template Library

The platform shall support managing templates by type, including layouts, general templates, food & beverages, chain retail, financial bank, commercial building, traffic & transportation, media & health, culture, sports, and education templates.

My Template

The platform shall support adding the provided templates to My Template.

Release by Template

The platform shall support selecting templates for content creation and then setting schedules for content release.

Custom Release

1. The platform shall support creating custom programs.
2. The platform shall support adding weather window for content release after configuring the weather Web manufacturer.
3. The platform shall support adding picture, text, and dynamic picture/text, and then setting the rotation degree, round corner, and micro animation.
4. The platform shall support uploading and setting customized fonts.
5. The platform shall support adding RSS windows for releasing subscribed information.

Program Preview

The platform shall support previewing programs, starting or pausing playing, and adjust the playing speed to 1x, 2x, or 4x.

Video Wall Program

The platform shall support creating the video wall program. The platform shall supports configuring and controlling the video wall.

4.26.4 Schedule Management

Ordinary Schedule

1. The platform shall support creating a daily schedule, weekly schedule, loop schedule, default schedule, or customizing a schedule.
2. The platform shall support looping programs by week.

Cut-In Schedule

The platform shall support adding cut-in programs and cut-in text.

Device Sync Playing

The platform shall support enabling device sync playing.

Release Record

1. The platform shall support displaying the release records in the list, and filtering the records.
2. The platform shall support the following release status: Releasing, Released, Releasing Failed, Release Canceled, and To Be Released. Display the terminal name, release progress, and release status.
3. The platform shall support canceling releasing for terminals that are not released or are in releasing, and releasing again for releasing failed terminals.

4.26.5 Review Management

1. The platform shall support auto generating the content review process, and if the review is approved, the content will be applied to the device automatically.
2. The platform shall support previewing the content when reviewing contents.

4.26.6 Material Library

Material Display

1. The platform shall support displaying materials in the list or in the thumbnail, and searching for materials by keywords and by conditions.
2. The platform shall support adding materials in the list to My Favorites.
3. The platform shall support viewing the material usage and clearing not-used or other unneeded materials.

Material Upload

1. The platform shall support uploading the following material types: picture, video, audio, document, webpage, URL picture, stream media server, IPC, etc.
2. The platform shall support selecting the area for materials when uploading.

Material Approval

The platform shall support using materials after they are approved by users of the current organization or higher-level organization who have the permission to approve.

4.26.7 Basic Settings

1. The platform shall support enabling weather service and setting the weather manufacturer for the programs including weather information.
2. The platform shall support configuring the storage location of materials.
3. The platform shall support configuring video walls with custom dimensions.

4.27 Emergency Mustering

Emergency Solution Configuration

1. The platform shall support providing a guidance for configuring the emergency solution.
2. The platform shall support configuring multiple doors in different areas as the doors remaining unlocked when an emergency is triggered.
3. The platform shall support configuring entrance points, exit points, and mustering points.
4. The platform shall support adding emergency counting groups for roll call.

Emergency Solutions for Areas

1. The platform shall support configuring emergency mustering solutions for multiple areas.
2. The platform shall support triggering or turning off emergency for multiple areas.

Quick Response

1. The platform shall support starting and ending an emergency automatically and manually. When the platform is in emergency, the platform will send a report containing person roll call information.
2. The platform shall support starting and ending an emergency via the Web Client, Control Client, and Mobile Client.

Real-Time Roll Call

1. The platform shall support starting a roll call by which users can account for all the persons in the emergency counting groups. Support getting data including total people number, people in danger, people out but not checked in, people out and checked in.
2. The platform shall support viewing the last entrance/exit information in the real-time statistics list of emergency counting groups.
3. The platform shall support checking in persons in emergency counting groups on the platform.
4. The real-time statistics shall support displaying the location of last check-in.
5. The platform shall support viewing details of each person when an emergency is triggered.

6. The platform shall support sending reports manually.
7. The platform shall support exporting an emergency mustering report in PDF format.

Permission

The platform shall support configuring the permission of configuring emergency solutions and starting a roll call.

4.28 Broadcast Management

- ***System Deployment and Management***
- ***Media Library***
- ***Storage Configuration for Broadcast***
- ***Live Broadcast***
- ***Scheduled Broadcast***
- ***Event and Alarm***

4.28.1 System Deployment and Management

Device Management

1. Support adding IP speakers.
2. Support displaying the IP address, name, serial no., and network status of the IP speaker.
3. Support managing IP speakers by areas.
4. Support linking cameras (4 cameras at most) with IP speakers. Support viewing the live view of the IP speaker's related cameras.
5. Support adding and managing IP speakers on the map.
6. Support setting the volume for the IP speaker. Supports configuring scheduled broadcast, live broadcast, and linked broadcast.

Network

1. Supports adding IP speakers to the platform without entering the device IP address or port number.
2. Support configuring the broadcast mode.

4.28.2 Media Library

1. Support managing the media library by group.
2. Support uploading the audio file in MP3 format.
3. Support displaying the format and the size of the audio file. Support downloading the audio file.

4.28.3 Storage Configuration for Broadcast

1. Support setting storage location (local PC or pStor) for the broadcasted audio and the uploaded media files.
2. Support enabling/disabling recording audios during the live broadcast.
3. Support searching for live broadcast records.
4. Support setting parameters for the live broadcast.

4.28.4 Live Broadcast

Speak

1. Support live speaking via group. Support selecting the speaker units that are grouped or not grouped.
2. Support live speaking by area.
3. Support live speaking when viewing the live view of IP speaker's related cameras.

Audio File

1. Support broadcasting the audio file by group. Support selecting the speaker units that are grouped or not grouped. Support selecting the audio file added to the media library.
2. Support broadcasting the audio file by area. Support selecting the audio file added to the media library.
3. Support broadcasting the audio file when viewing the live view of IP speaker's related cameras. Support selecting the audio file added to the media library.

Custom Broadcast Content

- Support broadcasting the custom broadcast content by group. Support selecting the speaker units that are grouped or not grouped.
- Support broadcasting the custom broadcast content by area.

4.28.5 Scheduled Broadcast

1. Support adding multiple scheduled broadcast tasks.
2. Support broadcasting by group. Support selecting the speaker units that are grouped or not grouped.
3. Support broadcasting by area.
4. Support setting the period type for broadcast, including Every Day and Every Week.
5. Support setting the priority for scheduled broadcast tasks.
6. Support selecting audio file(s) for the scheduled broadcast task, and setting the playing duration for each audio file.
7. Support configuring the times of broadcasting.

4.28.6 Event and Alarm

1. Support linking speaker unit(s) when adding the linkage action for event and alarm. Support selecting the audio file(s) added to the media library. The related audio file(s) will play when the alarm is triggered.
2. Support broadcasting triggered by the alarm until the alarm is acknowledged.
3. Support live broadcast by speaking or by playing audio files when viewing the alarm related live view on the Control Client.

4.29 Canteen Consumption

- ***Payment Terminal Management***
- ***Payment Overview***
- ***Basic Configuration***
- ***Merchant Management***
- ***Payment Group Management***
- ***Payment Strategy Management***
- ***Transaction Search***
- ***Statistics and Reports***
- ***Visitor Management***
- ***Event and Alarm***
- ***Maintenance and Management***
- ***System***

4.29.1 Payment Terminal Management

Payment Terminal Management

- Support adding, deleting, and editing payment terminals.
- Support viewing payment terminal information including name, address, serial number, version, network status, and password strength. Support remote configuration.
- Support adding payment terminals via IP segment and IP address.
- Support importing and exporting payment terminals.

Device Features

- Support detecting online payment terminals via SADP.
- Support remotely configuring payment terminals on the Remote Configuration pages of devices.

Firmware Upgrade

Support upgrading firmware via the current Web Client.

4.29.2 Payment Overview

- Support displaying the number of merchants and the persons with payment permissions.
- Support displaying revenue distribution, payment times distribution, and consumer distribution.
- Support viewing the wizard of the canteen consumption module.

4.29.3 Basic Configuration

General Configuration

- Support applying the currency unit to payment terminals.
- Support automatically applying permissions and automatically calculating statistics.
- Support enabling offline payment record to regularly synchronizing the payment records on the Web Client with the records stored on payment terminals.
- Support uploading offline records.

Meal Type Configuration

- Support configuring meal types and their time periods. Support cross-day time periods for meal types.
- Support adding, editing, deleting (excluding the default 4 types), and viewing meal types (up to 8 meal types are allowed).

4.29.4 Merchant Management

- Support adding, editing, and deleting merchants.
- Support linking payment terminals with merchants.
- Support setting consumption modes (Amount, Fixed Amount, and Payment Times) for payment terminals linked with merchants.
- Support setting payment rules (Amount, Fixed Amount, and Payment Times) in non-meal periods.

4.29.5 Payment Group Management

- Support adding, deleting, editing, and searching payment groups.
- Support adding persons to payment groups. Support editing, deleting, and searching persons from a payment group.
- Support giving scheduled allowances to payment groups.
- Support giving scheduled allowances to persons from a payment group.
- Support canceling scheduled allowances to payment groups.
- Support canceling scheduled allowances to persons from a payment group.

- Support manually giving allowance amount / times, topping up money, refunding money, and correcting transactions for persons from a payment group.
- Support viewing the information of persons from a person group. The information includes profile picture, name, ID, payment group, remaining amount, remaining times, scheduled allowance, and operations.

4.29.6 Payment Strategy Management

Payment Rule

Support adding, deleting, editing, and searching for payment rules in meal periods and non-meal periods.

Payment Group Authorization

- Support linking merchants and payment rules with payment groups. Support canceling linkages and viewing linkages.
- Support authorizing/deauthorizing payment groups and applying persons from payment grooups to the corresponding payment terminals of merchants.

Person Authorization

- Support linking merchants and payment rules with persons from a payment group. Support canceling linkages and viewing linkages.
- Support authorizing/deauthorizing a person and applying the person to the corresponding payment terminals of merchants.

4.29.7 Transaction Search

Transaction Record

Support searching for transaction records of persons from a payment group.

Payment Record

Support searching for the payment records of persons.

4.29.8 Statistics and Reports

1. The platform shall support generating group payment statistics.
2. The platform shall support generating device payment statistics.
3. The platform shall support generating person payment statistics.
4. The platform shall support generating revenue report of merchants.

4.29.9 Visitor Management

1. The platform shall support configuring consumption permissions for visitors.
2. The platform shall support applying consumption permissions to devices for visitors.

4.29.10 Event and Alarm

Event and Alarm

The platform shall support configuring the rules for events triggered by payment terminals.

Overview

The platform shall support viewing the number of abnormal payment terminals.

4.29.11 Maintenance and Management

Health Check Frequency

The platform shall support configuring the health check frequency of payment terminals.

Resource Status

The platform shall support viewing the status of payment terminals such as network status and arming status.

System Data Backing Up and Restoring

The platform shall support backing up and restoring the consumption data.

Data Exporting

The platform shall support exporting the data of payment terminals such as IP address and serial No.

License Details

The platform shall support viewing license details of canteen consumption module and the number of payment terminals.

Wizard

The platform shall support viewing a wizard for the use of the canteen consumption.

4.29.12 System

1. The platform shall support configuring the retention period of payment records.
2. The platform shall support configuring user's configuration permissions of the canteen consumption module and operation permissions of consumption devices.

4.30 Parcel Tracking

4.30.1 Resource Management

Device Management

1. The platform shall support adding scanning devices by device types which include Hikvision smart code reader, Hikvision barcode scanner, CodePlatform, and third-party scanning device. For Hikvision smart code reader, support enabling picture storage on the platform.
2. The platform shall support using the camera channel of an NVR added to the platform as a scanning channel if the NVR is linked with a scanning device.
3. The platform shall support displaying scanning device information in a list, including the device name, device address, device type, access mode, and network status.
4. The platform shall support batch adding scanning devices.

Area Management

1. The platform shall support customizing the additional information of areas.
2. The platform shall support adding channels of scanning devices to areas.
3. The platform shall support configuring the picture storage location (pStor or CVR) for each scanning channel.

4.30.2 Check Point Management

Check Point Configuration

1. The platform shall support configuring the recording time settings for each individual check point. The individually configured settings shall have higher priority than the generic settings.
2. The platform shall support adding/deleting/editing and searching for check points. The user shall be able to configure information such as check point name, check point type, note, data source, recording time settings, and linked cameras.
3. The platform shall support adding check points to Favorites for quick selection during scanning record search.
4. The platform shall support selecting a scanning device type for a check point.

General Parameter Configuration

The platform shall support configuring the general parameters, such as the recording time settings, the time threshold of exception, and the retention period of scanning records.

1. The platform shall support enabling the use of stop code for defining the time range of the related video of each scan. If stop code is not enabled, the user shall be able to specify a custom time or the previous scanning time as the recording start time, and a custom time or the next scanning time as the recording end time.
2. The platform shall support customizing the time threshold of exception for defining the recording start/end time when a scan interval exceeds the set threshold.
3. The user shall be able to set the retention period of scanning records to 1 month, 2 months, or 3 months. The platform shall support prompting users when the retention period is changed to a shorter length.

4.30.3 Scanning Record Search (Control Client)

1. The platform shall support searching for scanning records by time, barcode, and check point.
   a. Time: The platform shall support specifying a time range of up to 7 days.
   b. Barcode Information (Optional): The platform shall support searching for a specific parcel if the corresponding barcode is entered and searching for all parcels in general if this field is left blank.
   c. Check Point (Optional): The platform shall support searching for records of the specified check points. If this field is left blank, the platform shall support searching for records of all check points for which the current user has permission. The admin user shall be able to search for scanning records of check points that have been deleted from the platform.
   d. The platform shall support displaying search results in list view and gallery view. Each thumbnail in gallery view shall show the first frame of the related video. The platform shall support displaying information such as check point, barcode, and scanning time in list view and grouping scanning records by check point.
2. The user shall be able to click a barcode scanning record to view the scan details, check the captured pictures, and play back the related video.
3. The platform shall support downloading up to 20 scanning records and the related pictures/videos.

4.30.4 Scanning Record Search (Web Client)

Scanning Record Search

The platform shall support searching for scanning records by time, barcode, and check point.

1. Time: The platform shall support specifying a time range of up to 7 days.
2. Barcode Information (Optional): The platform shall support searching for a specific parcel if the corresponding barcode is entered and searching for all parcels in general if this field is left blank.
3. Check Point (Optional): The platform shall support searching for records of the specified check points. If this field is left blank, the platform shall support searching for records of all check points for which the current user has permission. The admin user shall be able to search for scanning records of check points that have been deleted from the platform.
4. The platform shall support displaying search results such as barcode, check point, area, resource name, device type, and scanning time in list view.

Scanning Record Details

The user shall be able to click a barcode scanning record to view the scan details, check the captured pictures, and play back the related videos.

Scanning Record Download

The platform shall support downloading up to 20 scanning records and the related pictures/videos.

4.30.5 Permission Settings

Resource Access

The platform shall support configuring the access permission of scanning devices, parcel resources, and check points.

User Permission

The platform shall support configuring user permissions of operating the parcel tracking module.

4.30.6 Maintenance and Management

System Data Backing Up and Restoring

The platform shall support backing up and restoring the parcel data.

License Details

The platform shall support viewing license details of the parcel tracking module and the number of check points.

4.30.7 OpenAPI

Support searching for scanning records of parcels.

4.31 Dock Management

4.31.1 Dock Configuration

Data Retention Period Configuration

Support configuring the retention time of dock data: 1 month, 3 months, 6 months, 1 year, 18 months, and 2 years.

Dock Area Configuration

1. Support adding/deleting/editing dock areas, including the dock area name and supported total number of docks.
2. Support configuring dock areas, including map configuration and dock configuration.
   a. Map configuration: Support pictures in JPFG, JPG, or PNG format.
   b. Dock configuration: Support adding a single dock or multiple docks in a batch; Support coping an existing dock; Support batch selecting docks/aligning/deleting docks.

Camera Configuration

Support linking a single dock with 2 dock specified cameras and 2 general cameras. At least 1 dock specified camera is required.

4.31.2 Dock Monitoring

1. Support viewing the status (occupies, vacant, or unknown) of each dock and watching live or recorded videos streamed from linked cameras.
2. Support viewing the information of the vehicle parked in the dock, including the dock name, vehicle's license plate No., and occupation duration.

4.31.3 Dock Loading/Unloading Statistics

Vehicle Loading/Unloading Data Search

Support searching for vehicle data by time, license plate No., and dock. Support viewing the license plate No., dock area, entering/exiting time, loading ratio (entry/exit), and dwell time of each matched record. Supports customizing columns to be displayed.

Export Vehicle Loading/Unloading Data

Support exporting vehicle loading/unloading data in EXCEL or CSV format, including the license plate No., dock area, dock No., loading ratio (entry/exit), entering/exiting time, and dwell time.

View Vehicle Loading/Unloading Data

Support viewing vehicle loading/unloading data via the Control Client, including the captured pictures and recorded videos when the vehicle enters/exits the dock.

4.31.4 Dock Statistics and Reports

Support viewing statistics and reports on the dock usage, dock throughput, and dock using trend.

4.31.5 Dock Event Management

Support receiving dock events and alarms reported by dock specified cameras accessed in the following ways:

1. H8 series dock specified cameras accessed via HCNetSDK;
2. H8 series dock specified cameras added to NVR via HCNetSDK (the NVR is accessed to the platform via HCNetSDK or ISUP).

4.31.6 Permission Control

Resource Permission

Support configuring resource access permissions by dock.

User Permission

Support configuring user operation permissions.

4.31.7 Maintenance and Management

Back Up and Restore System Data

Support backing up and restoring dock data.

License Details

Support viewing the license details of dock management module and the number of docks.

4.31.8 OpenAPI

Support reporting events (including vehicle entry/exiting and parking space status event) related to dock management.

4.32 OpenAPI

- ***Physical Resource APIs***
- ***Logical Resource APIs***
- ***Alarm Service APIs***
- ***Access Control APIs***
- ***Event Service APIs***
- ***Common API***

4.32.1 Physical Resource APIs

Encoding Device

Support getting the information of a specific encoding device and information list of all encoding devices. Support searching for specific encoding devices by device name.

Access Control Device

Support getting the information of a specific access control device and information list of all access control devices. Support searching for specific access control devices by device name.

Streaming Server

Support getting the information list of all Streaming Servers.

Recording Server

1. Support getting the information of a recording server and information list of all Recording Servers, including recording status, HDD information, etc.
2. Support getting the storage status of all cameras linked to a Recording Server.

DeepinMind Server

Support getting the information list of all DeepinMind Servers, including IP address, network status, etc.

System Management Server

Support getting the information of the System Management Server, including CPU usage, network status, etc.

4.32.2 Logical Resource APIs

Organization

1. The platform shall support getting the information of root organization and getting information list of lower-level organizations by parent organization.
2. The platform shall support getting the information of a specific organization and information list of all organizations.
3. The platform shall support adding, deleting, and editing the information of an organization.
4. The platform shall support searching for specific organizations by conditions.

Site

The platform shall support getting the information of a specific site and information list of all sites.
The platform shall support searching for specific sites by site name.

Area

The platform shall support getting the information of a specific area and information list of all areas.
The platform shall support getting lower-level areas by parent area.

Camera

The platform shall support getting the information of a specific camera by camera ID and getting information list of all cameras.
The platform shall support searching for cameras by camera name.

Alarm Input

The platform shall support getting the information of a specific alarm input and information list of all alarm inputs.
The platform shall support searching for alarm inputs by conditions (input alarm name, device ID, area ID, etc.).

Alarm Output

1. The platform shall support getting the information of a specific alarm output and information list of all alarm outputs.
   The platform shall support searching for alarm outputs by conditions (input alarm name, device ID, area ID, etc.).
2. The platform shall support controlling alarm output.

Vehicle

1. The platform shall support adding, deleting, and editing a vehicle group.
   The platform shall support getting the information list of all vehicle groups.
2. The platform shall support adding information of a vehicle to a specific vehicle group, deleting information of a vehicle from a group, and editing information of a vehicle in a group.

The platform shall support getting the information of a specific vehicle and information list of all vehicles.
3. The platform shall support applying the validity period of the license plate number to devices.
4. The platform shall support adding, deleting, viewing, and editing the information about vehicles in the blocklist.

Access Point

1. The platform shall support getting the information of a specific access point and information list of all access points.
   The platform shall support getting the information list of access points in a specific area.
   The platform shall support searching for access points by conditions.
2. The platform shall support getting card reader information of a specific access point.

Person

1. The platform shall support getting the information of a specific person and information list of all persons.
   The platform shall support searching for specific persons by conditions.
2. The platform shall support getting person's profile picture uploaded when adding the person.
3. The platform shall support adding, deleting, and editing person information, including the person's face and fingerprint information.
4. The platform shall support applying person's access level settings or information (person ID, person name, face picture, fingerprint, card No., validity, etc.) to access control devices.
5. The platform shall support getting status details of applying person information or person's access level settings to the devices.
   The platform shall support returning applying failures and person information waiting to be applied.
6. The platform shall support getting and editing a person's custom information.
7. The platform shall support searching for the attendance status and the duration of other statuses (normal, late, early leave, absent, and late and early leave) of specific person on the current day.
8. The platform shall support assigning room No.s to persons.
9. The platform shall support verifying the validity of face pictures before they are applied to MinMoe devices.

Access Level

1. The platform shall support assigning and unassigning access levels to persons.
2. The platform shall support getting access level list.
   The platform shall support getting person list related to an access level.

Face Comparison Group

1. The platform shall support getting, deleting, and editing information of a face comparison group.
2. The platform shall support applying all persons' information in the face comparison groups to the linked devices.

Face Information

1. The platform shall support adding information of a single face to the specified face comparison group and deleting information of a single face from the specified face comparison group.
2. The platform shall support searching for information of all faces in the specified face comparison group.
3. The platform shall support downloading the specified face picture according to the URL.
4. The platform shall support 1V1 or 1VN identity verification.
5. The platform shall support searching for the information about faces by camera.

Visitor

1. The platform shall support adding a visitor's information for checking in and editing a visitor's information.
   The platform shall support revoking a visitor's permission after he/she checks out.
2. The platform shall support adding/editing/deleting a visitor's reservation records.
   The platform shall support searching for reservation records.
3. The platform shall support searching for the custom information about visitors.
   The platform shall support searching for the information about visitor groups and visitors' information.
4. The platform shall support searching for visitors' information by condition.
   The platform shall supports getting the information about a single visitor.
5. The platform shall supports searching for the status of specified visitor on the specified day, including reserved, checked in, expired, and checked out.
6. The platform shall supports searching for visitor check-in records.
7. The platform shall supports searching for reservation details by reservation No.
8. The platform shall supports searching visitor group for visitor reservation.
9. The platform shall support approving or rejecting submitted visitor reservations.

4.32.3 Video Service APIs

Live View

1. Support getting the streaming URL for live view.
2. Support specifying stream type and streaming protocol.
3. Support streaming via RTSP from CCTV cameras that are added via ISUP.
4. The streaming protocol is available for:

a. Getting stream in Hikvision's custom type by cooperating with VideoSDK.
b. Getting stream via WebSocket by cooperating with JsDecoder SDK.
c. Getting stream via standard RTSP.

Playback

1. Support getting the streaming URL for playback.
2. Support specifying camera ID, start and end time, and streaming protocol.
3. The streaming protocol is available for:
   a. Getting stream in Hikvision's custom type by cooperating with VideoSDK.
   b. Getting stream via WebSocket by cooperating with JsDecoder SDK.

Two-Way Audio

Support getting the streaming URL for two-way audio. Currently, the two-way audio function can only be realized with the cooperation of VideoSDK and WebSDK.

PTZ Control

1. Support adding and deleting a preset of a camera.
2. Support searching for the preset information of a camera.
3. Support adding and deleting a patrol of a camera.
4. Support searching for the patrol information of a camera.
5. Support controlling the PTZ by camera ID.

Video SDK

1. Video SDK, without video interface, provides applications in PC client, including live view, recording, video search, playback, single-frame playback, video downloading, capture, audio control, two-way audio, etc.
2. Provides both the C++ and C# demos for Video SDK

Video WebSDK

1. Video WebSDK, with basic video interface and tool bar, provides a plug-in running on web browser to implement several video functions, such as live view, playback, creating plug-in window, window size adjustment, window division, etc.
2. Provide demos for WebSDK.

jsDecoder SDK

1. jsDecoder SDK, with basic video interface, provides a no plug-in solution to start live view (including manual recording, manual capturing, audio control, full-screen display, digital zoom, 3D positioning) and playback (pause, stop, fast/slow forward, single-frame playback, manual recording, digital zoom, 3D positioning) of the device via the web browser. jsDecoder SDK Support WSS streaming type.
2. Provide demos for jsDecoder SDK.
3. Support two-way audio.

Standard Streaming

Support standard playback via RTSP, live view and playback via HLS, and live view and playback via RTMP.

4.32.4 Intelligent Analysis APIs

People Counting Statistics

1. Support getting people counting statistics of the specified camera by minute, hour, day, and month. Support uploading alarm information by priority.
2. Support getting the real-time statistics of resource groups.
3. Support getting the list of resource groups.

Heat Map

Support getting people's dwell time and people counting statistics.

4.32.5 Alarm Service APIs

Alarm Record Search

Support searching for alarm records.

Alarm Picture

Support downloading alarm pictures.

Alarm Acknowledgement

Support acknowledging alarms.

Alarm/Event Types

1. Support 56 alarm/event types about camera, such as loitering, people gathering, camera recording exception, wrong-way driving, and fast moving.
2. Support 38 alarm/event types about card swiping, such as duress alarm, access granted by employee ID and fingerprint, and access denied by employee ID and face.

4.32.6 ANPR Service APIs

Vehicle Passing Record Search

The platform shall support searching for the vehicle passing records.

ANPR Event Information

The platform shall support ANPR event information: license plate No., vehicle brand, vehicle owner, owner's contact, vehicle type, vehicle color, belonged country/region, and driving direction.

Passing Vehicle Picture

The platform shall support searching for and downloading pictures of the passing vehicles.

4.32.7 Access Control APIs

Door Control

Support controlling doors by door ID, including opening doors, closing doors, remaining doors open, and remaining doors closed.

Access Record Search

Support searching for access records by time, person name, access point ID, and event type.

Access Event

Support getting pictures of access events.

4.32.8 Event Service APIs

Event Subscription

Support subscribing to events by event type, such as intrusion event, temperature alarm event, license plate matched alarm, abnormal temperature alarm, and access event (authenticated via face and password).

Subscribed Event Search

Support searching for subscribed events by user ID.

Generic Event

Support adding, deleting, and editing a generic event. Support getting the information list of generic events. Support configuring parameters to receive alarms of the generic events.

4.32.9 Parking Lot APIs

Parking Lot Management

The platform shall support getting the parking lot information list. Support searching the vehicle passing records of a specific parking lot and the vehicle's parking records and parking duration. Support getting the occupancy of parking spaces on specific floors and parking spaces of each type.

Parking Fee

1. The platform shall support getting the parking fee and the parking duration according to the license plate number.
2. The platform shall support returning the confirmation information after the parking fee is paid. The vehicle can exit the parking lot after that.

4.32.10 Mobile Monitoring APIs

Vehicle List

The platform shall support getting the vehicle list in the Mobile Monitoring module.

Vehicle Information

The platform shall support getting the detailed vehicle information according to the vehicle No.

Two-Way Audio

The platform shall support direct two-way audio with the mobile devices.

GPS Information

The platform shall support getting the real-time GPS information, and searching for historical GPS information.

Report Alarm

The platform shall support reporting mobile device alarms to the platform, including ADAS event alarm, driving behavior event alarm, emergency alarm, etc.

Download Pictures/Videos

The platform shall support downloading pictures and videos from on-board monitoring event search or notification pushing.

4.32.11 Common API

Support getting version information of the platform.

4.33 Protocol Integration

- ***BACnet Gateway***
- ***BACnet Device Driver***
- ***SIA Gateway***
- ***SIA Device Driver***

4.33.1 BACnet Gateway

Basic Configuration

The platform shall support configuring the following basic information: the partner user, protocol version (version 1.0), BAC instance No., BACnet device name, APDU timeout duration, and APDU resending times.

Object Template

The platform shall support configuring the object template. The four supported object types are the binary value, access door, binary output, and binary input.

Object Configuration

1. The platform shall support setting the object template to Network Status and linking resources (read-only property) with BACnet objects. The supported device resources include encoding devices, access control devices, recording servers, and streaming servers. The supported logical resources are cameras, doors, and alarm outputs.
2. The platform shall support setting the object template to Door Status and linking the door resource (read-write property) with BACnet objects.
3. The platform shall support setting the object template to Alarm Output Status and linking the alarm output resource (read-write property) with BACnet objects.
4. The platform shall support setting the object template to Alarm Status and linking the alarm resource (read-only property) with BACnet objects.

Object Linkage

1. The platform shall support linking resources on the platform with BACnet objects to manage resources including access control devices and alarm outputs on third-party systems.
2. The platform shall support reporting alarm events of resources linked with BACnet objects to third-party systems.

4.33.2 BACnet Device Driver

BACnet Device Access

1. The platform shall support adding, deleting, editing BACnet devices, and adding online BACnet devices.
2. The platform shall support importing BACnet objects to areas and viewing their status.
3. The platform shall support filtering BACnet objects by object types.

BACnet Permission Management

The platform shall support configuring the resource permission, access permission, and configuration permission for BACnet.

BACnet Object Maintenance

1. The platform shall support editing the present value of a BACnet object. The supported object types are the multi-state value, multi-state output, multi-state input, binary input, binary output, binary value, analog input, analog output, and analog value.
2. The platform shall support viewing exceptions (including offline, fault, in alarm, overridden, and out of service) of BACnet objects.
3. The platform shall support searching for events of BACnet devices on the server log search page.

BACnet Event

The platform shall support receiving and notifying different BACnet event types, including the change of state, command failure, fault, in alarm, out of range, out of service, and overridden.

Map Monitoring

1. The platform shall support setting different icons to display different status of BACnet objects on a visual map.
2. The platform shall support displaying the real-time status of BACnet objects on a visual map.

4.33.3 SIA Gateway

Basic Configuration

The platform shall support configuring the following basic information: the partner user, protocol version (SIA-DCS), third-party system IP address, port No., linecard number, receiver number, and heartbeat interval.

Event Template Configuration

1. The platform shall support setting the event source type to the encoding device event, camera event, alarm input event, and security control panel event.
2. The platform shall support entering custom event types and SIA codes.
3. The platform shall support selecting default event types and SIA codes.
4. The platform shall support importing event templates.

Zone Configuration

The platform shall support setting the following SIA zone configuration: the configuration name, account ID, group ID, resource type, and event template.

Alarm Forwarding

The platform shall support forwarding alarms to third-party systems.

4.33.4 SIA Device Driver

SIA Device Access

1. The platform shall support adding, deleting, and editing devices supporting the SIA protocol.
2. The platform shall support adding and editing the SIA accounts.
3. The platform shall support adding, deleting, and editing zones.
4. The platform shall support importing SIA zones to areas as alarm inputs.

SIA Event

1. The platform shall support setting the SIA event access by linking event types with event IDs.
2. The platform shall support setting SIA events and triggering the corresponding alarms.
3. The platform shall support receiving SIA events.

Maintenance

1. The platform shall support viewing operation logs of SIA devices.
2. The platform shall support viewing the zone status of SIA devices.
3. The platform shall support viewing the status of SIA devices.

Map Monitoring

The platform shall support viewing SIA zones on a visual map.

4.33.5 Modbus

Modbus Device Access

1. The platform shall support adding, deleting, and editing Modbus devices, and viewing the device status..
2. The platform shall support batch adding Modbus resources to the area and view the resource status.
3. The platform shall support configuring the resource parameters.

Modbus Event

1. The platform shall support configuring Modbus events.
2. The platform shall support receiving Modbus events.
3. The linkage action of editing the Modbus resource's value shall be triggered by other events.

Maintenance

1. The user shall be able to view operation logs of Modbus devices.
2. The user shall be able to view the resource status of Modbus devices.
3. The user shall be able to view the status of Modbus devices.

Map Monitoring

The platform shall support viewing Modbus devices on a visual map.

4.33.6 WhatsApp

Basic Parameters

1. The platform shall support configuring WhatsApp merchant account information, including merchant account, phone No., application No., endpoint address, access token, and verification token.
2. The platform shall support configuring the upper limit of daily and monthly conversation times. No more message push is allowed when the upper limit reached.

WhatsApp Template Review Record

The platform shall support viewing the review status of WhatsApp message templates.

WhatsApp Push Message Record

1. The platform shall support viewing WhatsApp message sending/receiving records.
2. The platform shall support filtering WhatsApp message sending/receiving records by the time, WhatsApp account name, and message status.

WhatsApp Push Message

The platform shall support enabling or disabling WhatsApp function on the platform.

Chapter 5 Execution

5.1 Examination

1. Inspect chosen area of installation prior to receiving devices and report any conditions that affect the installation process or any subsequent operation.
2. Please do not begin installation until all unacceptable conditions are rectified.

5.2 Preparation

Devices packaged in such way to help prevent any damage during construction.

5.3 Installation

1. Devices shall be installed in accordance with the manufacturers' instructions provided, as well as instructions based off any indicated floor design specifications.
2. Location of installation shall provide reasonable conditions for optimum device functionality. Temperature and humidity level conditions shall be taken into consideration.
3. All installations shall be performed with qualified service professionals only.
4. All devices shall be installed in accordance with the National Electric Code or applicable local codes.
5. Ensure location of installation provides a minimum possibility of accidental damage.

5.4 Field Quality Control

1. Assess the compatibility of mounting screws for all equipment to be installed.
2. Properly test all non-video systems against standard operational requirements.
3. Define, conclude, and report all issues with equipment to the manufacturers' customer service representatives.

5.5 Adjusting

1. Execute the necessary modifications to the Non-Video Management System for proper operation in accordance with the instructions provided by the manufacturer.
2. Ensure the customers unique requirements are reflected in the access control settings.

5.6 Demonstration

Upon final inspection, validate the non-video system and its device functions correctly.


See Far, Go Further