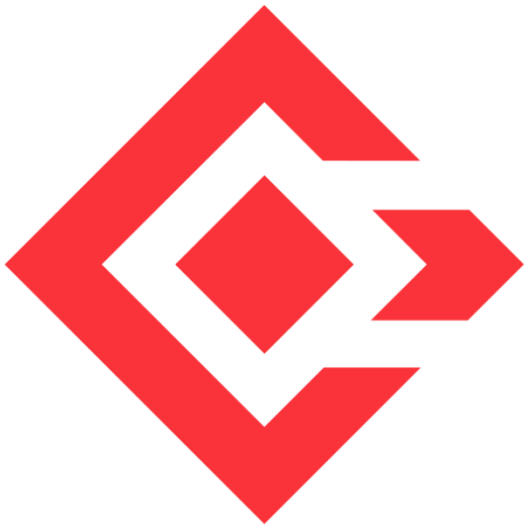


HIKVISION®

A&E System Specification

HikCentral Professional

This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2016 Edition) and The Project Resource Manual – CSI Manual of Practice.

www.csiresources.org Manufacturer is responsible for the accuracy of the technical data included in this specification.

Division 28 – Electronic Safety and Security

Section 28 20 00 – Video Surveillance
Section 28 23 00 – Video Management System
Section 28 23 11 – Video Management System Analytics
Section 28 23 13 – Video Management System Interfaces

Part 1 General

1.1 Summary of Requirements

A. HikCentral Professional System

1. It is consisted of System Management Service (SYS) providing unified authentication service for connecting with the clients and servers, and Application Data Service (ADS) providing data storage processing.

B. 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 Surveillance
8.	Section 28 21 00	Surveillance Cameras
9.	Section 28 21 13	IP Cameras
10.	Section 28 27 00	Video Surveillance Sensors
11.	Section 28 33 00	Video Surveillance – Security Monitoring and Control
12.	Section 28 51 19.15	Video Walls

1.2 References

A. 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
27.	MicroSD	Removable Miniaturized Secure Digital Flash Memory Card
28.	MPEG	Moving Pictures Experts Group
29.	MWB	Manual White Balance
30.	NAS	Network Attached Storage
31.	NIC	Network Interface Controller
32.	NTP	Network Time Protocol over Ethernet
33.	NVR	Network Video Recorder
34.	PIR	Passive Infrared Sensor
35.	PoE	Power over Ethernet
36.	POS	Point of Sale
37.	PPPoE	Point-to-Point Protocol over Ethernet
38.	PTZ	Pan Tilt Zoom
39.	QoS	Quality of Service
40.	ROI	Region of Interest
41.	RSM	Remote Site Management
42.	RTP	Real-Time Transport Protocol
43.	RTSP	Real-Time Streaming Protocol
44.	SD Card	Secure Digital Flash Memory Card
45.	SMTP	Simple Mail Transfer Protocol
46.	TCP	Transmission Control Protocol
47.	UDP	User Datagram Protocol
48.	UPnP	Universal Plug and Play
49.	UVSS	Under Vehicle Surveillance System
50.	VCA	Video Content Analysis
51.	VMS	Video Management System
52.	WB	White Balance
53.	WDR	Wide Dynamic Range
54.	SYS	System Management Service
55.	ADS	Application Data Service

1.3 Certifications, Standards and Ratings

Reference Standards

1. Network Standard
   a. IEEE – 802.3 Ethernet Standards
2. Video Compression
   a. 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

1.4 Submittals

A. 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

1.5 Qualifications

A. 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.

1.6 Delivery, Storage and Handling

A. General

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

1.7 Licensing and Support Agreements

1. Requires no Software Support Agreements with the manufacturer.

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

A. Support

1. Technical support shall be based in North America.
2. Technical support shall be available weekdays from 5 a.m. to 5 p.m. PST.

END OF SECTION

Part 2 Product

2.1 Manufacturer

A. Manufacturer:

Hikvision USA Inc.
18639 Railroad Street
City of Industry, CA 91748
Phone: +1-909-895-0400 | Fax: +1-909-595-2788
Web: www.HikvisionUSA.com

B. Product: HikCentral Professional– shall be designed to manage distributed sites or large groupings of cameras recording on NVRs, DVRs, pStor, Hybrid SANs, and Cloud Storage Servers.

2.2 Service Description

A. HikCentral Professional System Management Service:

1. SYS maximum capacity for devices management and event handling:
   a. Manages up to 1,024 resources, including encoding devices, access control devices, video intercom devices, elevator control devices, and Remote Sites
   b. Imports up to 3,000 video channels (Network Camera or analogue/TVI)
   c. Manages up to 64 Recording Servers per SYS
   d. Imports up to 3,000 alarm inputs/outputs respectively per SYS.

B. Service Manager: An application that manages the following Services

1. HikCentral Professional System Management Service is the core component of HikCentral, 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
      i. Communication between SYS and third-party device
   b. System Management Service
      i. Provide the unified authentication service for connecting with the clients and servers
      ii. Provides the centralized management for the users, roles, permissions, devices, and services.
      iii. Provides the configuration interface for surveillance and management module.
   c. Application Data Service
      i. Provide data storage and processing.
   d. HikCentral Professional Management Service
      i. The content server and signaling gateway of HikCentral
      ii. Mainly responsible for storage of static pages and reverse proxy of device configuration
   e. HikCentral Professional Streaming Gateway
      i. A component of SYS which forwards and distributes the video and audio data

ii. 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
iii. 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

2.3 Accessibility and Management Capabilities

A. 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

B. Shall support Active Directory integration for user management of Control Client and Mobile Apps (iOS and Android mobile operating systems)

C. Administration functions and operation functions are performed separately in the following clients:

1. 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
2. Control Client: All security operator features shall be accessed through the Control Client connected to SYS via LAN, WAN, or Internet
3. Mobile Client: Basic security operator features shall be accessed through the Mobile Client connected to SYS via LAN, WAN, or Internet

D. Shall support H.264, H.264+, H.265, and H.265+ encoding formats

E. Shall support SUP management of license to ensure smooth upgrade of HikCentral

F. Shall support Downloading logs from HikCentral Professional Service Manager

G. Shall support multi-time zone and DST

2.4 Network

A. 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.

2.5 PC Requirements (for HikCentral Professional Control Client)

A.	Minimum PC	Intel® Core™ i5-4590 @3.3 GHz
B.	RAM	8 GB
C.	Network	GbE network interface card
D.	Graphics Card	NVIDIA® GeForce® GTX 970
E.	Hard Disk Type	SATA-II Hard Drive or better
F.	Hard Drive Capacity	60 GB for OS and HikCentral Professional Control Client
G.	Other	Windows 7 64 bit

2.6 PC Requirements (for HikCentral Professional SYS Server without RSM)

A.	Minimum PC	Intel® CoreTM i5-4590 @3.30 GHz 3.30 GHz
B.	RAM	8 GB
C.	Network	GbE network interface card
D.	Graphics Card	NVIDIA® GeForce® GTX
E.	Hard Disk Type	SATA-II 7200 RPM Enterprise Class HDD
F.	Hard Drive Capacity	650 GB for the HDD where SYS service is installed
G.	Other	Windows 8.1 64-bit

2.7 PC Requirements (for HikCentral Professional SYS Server with RSM)

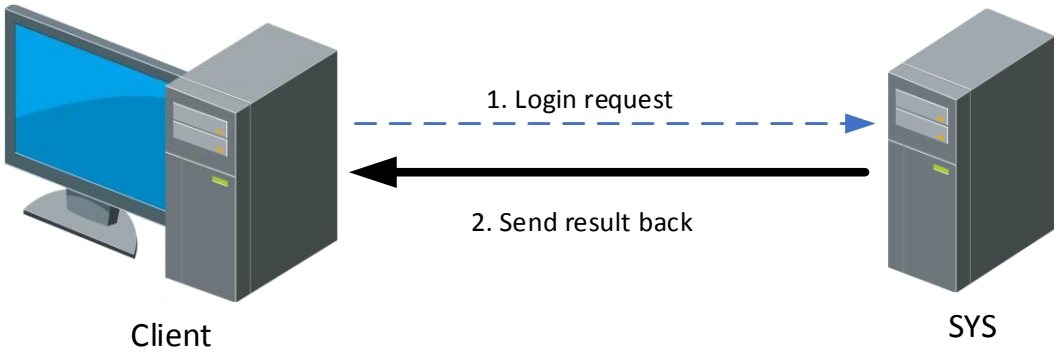
A.	Minimum PC	Intel® Xeon® E3-1220 V5 @3.00 GHz 3.00 GHz
B.	RAM	16 GB
C.	Network	GbE network interface card
D.	Hard Disk Type	SATA-II 7200 RPM Enterprise Class HDD
E.	Hard Drive Capacity	650 GB for the HDD where SYS service is installed
F.	Other	Windows Server 2012 (R2) 64-bit

2.8 PC Requirements (for Streaming Server)

A.	Minimum PC	Intel® Core TM i5-4590 @3.30 GHz
B.	RAM	8 GB
C.	Network	GbE network interface card
D.	Hard Disk Type	SATA-II 7200 RPM Enterprise Class HDD
E.	Hard Drive Capacity	10 GB for Streaming server log files

2.9 Signal Flow

2.9.1 Login

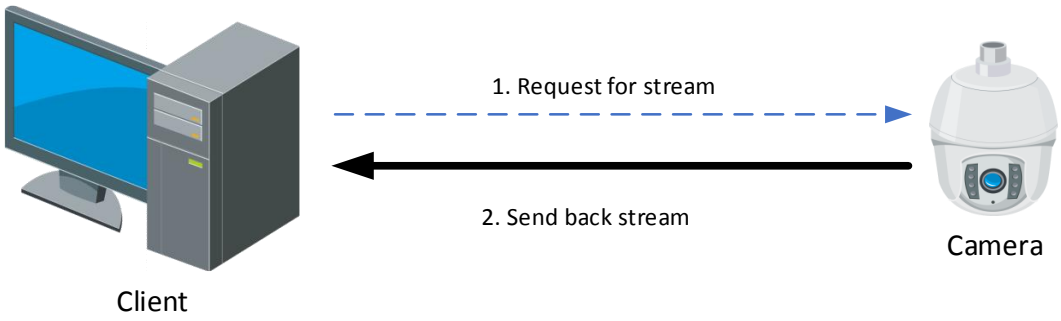


During the login, the signaling is exchanged between the client (Web Client/Control Client/Mobile Client) and the SYS server.
The signaling interaction process is as follows:

1. Enter the user name and password (domain name) on the client, which will be sent to the SYS server.
2. The SYS server receives the information, checks whether the user name and password (domain name) are correct, and sends the result to the client.

2.9.2 Live View

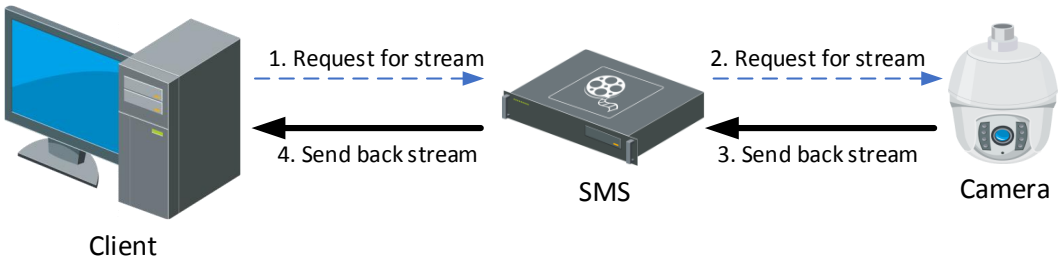
A. Live View for Directly Connected Device



If the SYS server, 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 sends a request to the device for obtaining the stream.
2. The device sends back the corresponding stream to the client.

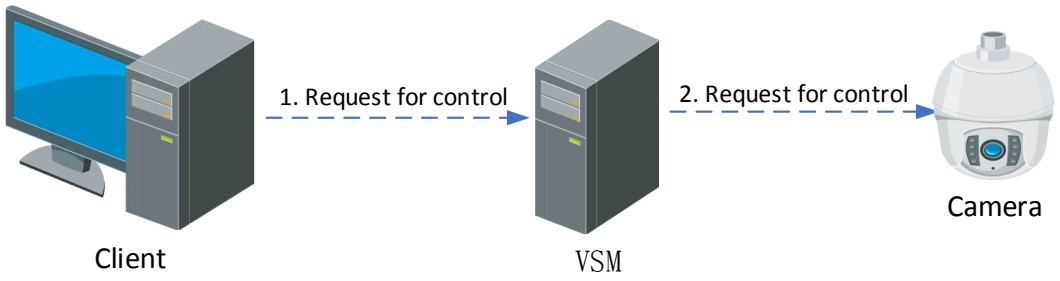
B. Live View via Streaming Server



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

1. The client sends a request to the SMS for obtaining the stream.
2. The SMS forwards the request to the device for obtaining the stream.
3. The device sends back the corresponding stream to the SMS.
4. The SMS forwards the obtained stream to the client.

C. PTZ Control



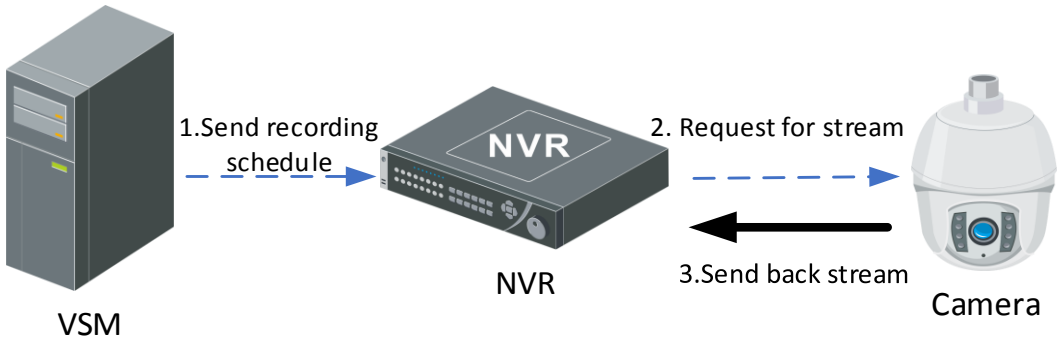
HikCentral Professional controls the PTZ camera via the SYS server.
The signaling process is as follows:

1. The client sends a request to the SYS server to control the PTZ camera.
2. The SYS server forwards the request to the corresponding device for PTZ control.

2.9.3 Video Storage and Playback

Device storage and playback includes: video stream storage, video file retrieval and playback.

A. Video Storage in NVR/DVR



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

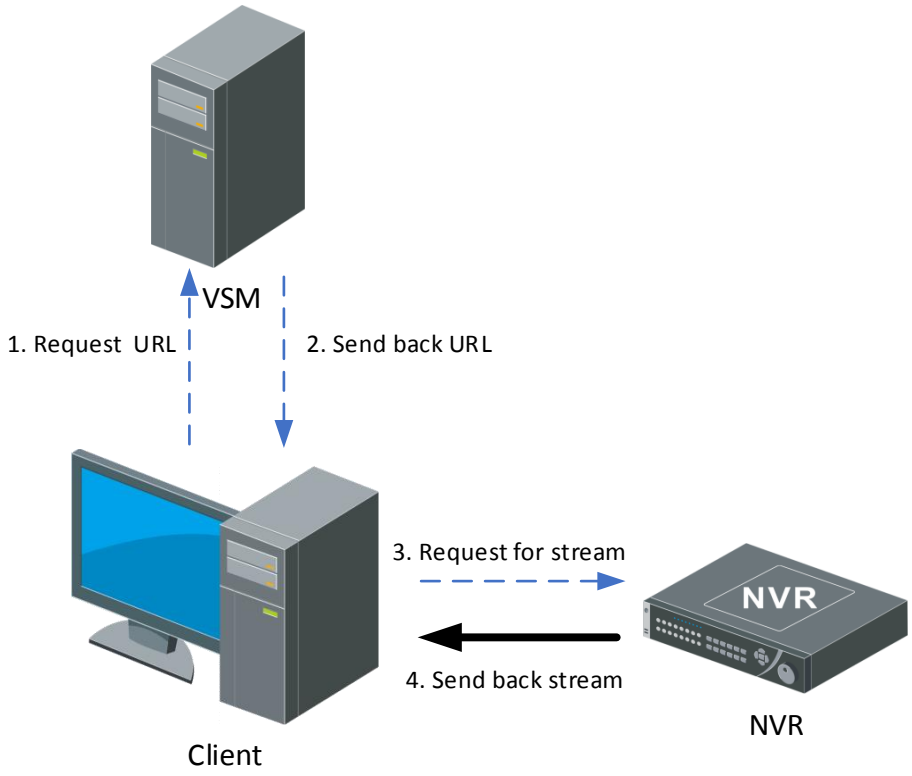
1. The SYS server sends the recording schedule (event-based recording schedule and time-based recording schedule) to the NVR.
2. When the recording schedule condition is met (within the time segment or an event is triggered), the NVR sends a request to the camera for obtaining the stream.
3. he camera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

Note: When manual recording is performed on the Control Client, the preceding steps are triggered manually, but not triggered by recording schedule.

B. Playback of Video in NVR/DVR

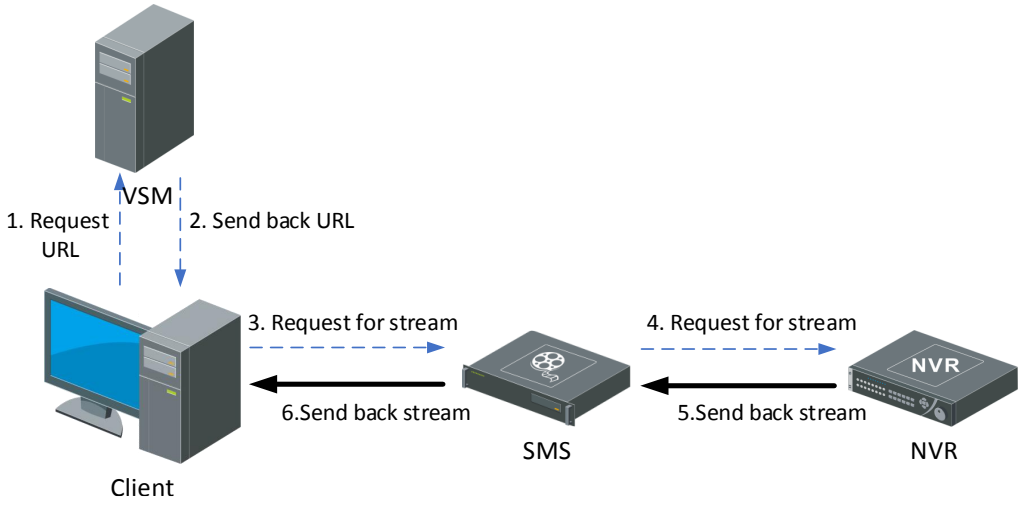
There are two modes for playing back video in NVR/DVR: The client obtains the stream directly from the NVR/DVR, and the client obtains the stream from the NVR/DVR via SMS. The signaling processes are as follows:

1. Playback of Video in Directly Connected Device



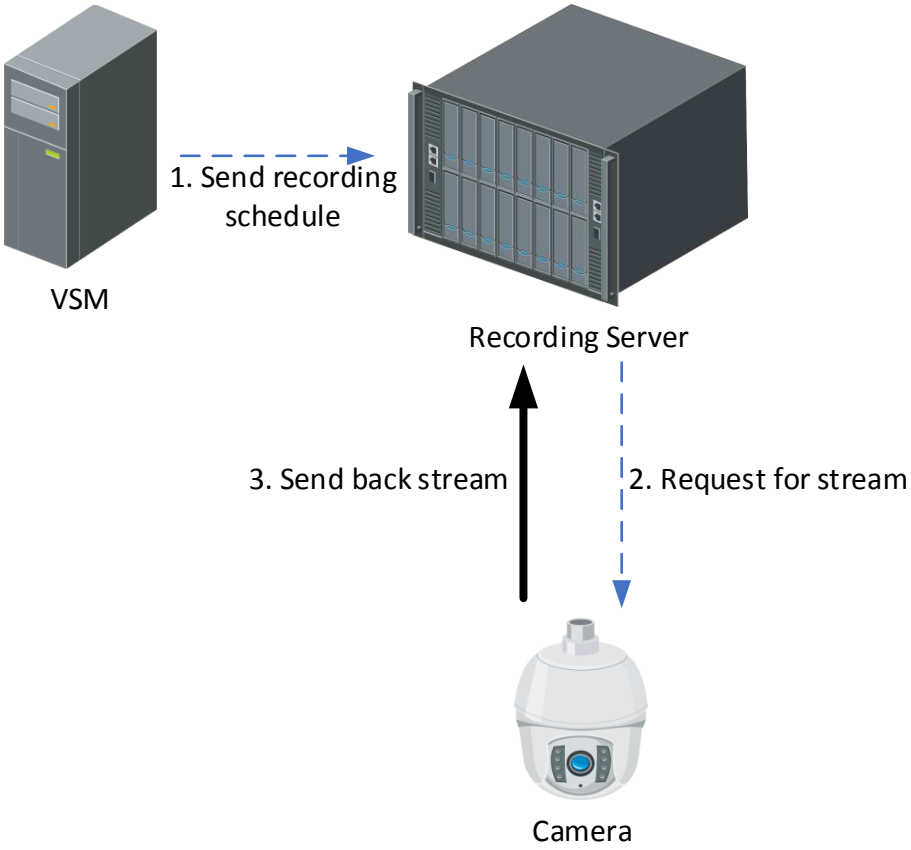
1. The client sends a request to the SYS server for obtaining the stream URL.
2. The SYS server sends back the stream URL to the client.
3. The client sends a request to the NVR for obtaining the stream.
4. The NVR sends back the corresponding stream to the client according to the request.

2. Playback via Streaming Server



1. The client sends a request to the SYS server for obtaining the stream URL.
2. The SYS server sends back the stream URL to the client.
3. The client sends a request to the SMS (Streaming Server) for obtaining the stream.
4. The SMS forwards the request to the NVR for obtaining the stream.
5. The NVR sends back the corresponding stream to the SMS according to the request.
6. The SMS forwards the corresponding stream to the client.

C. Video Storage in Recording Server



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

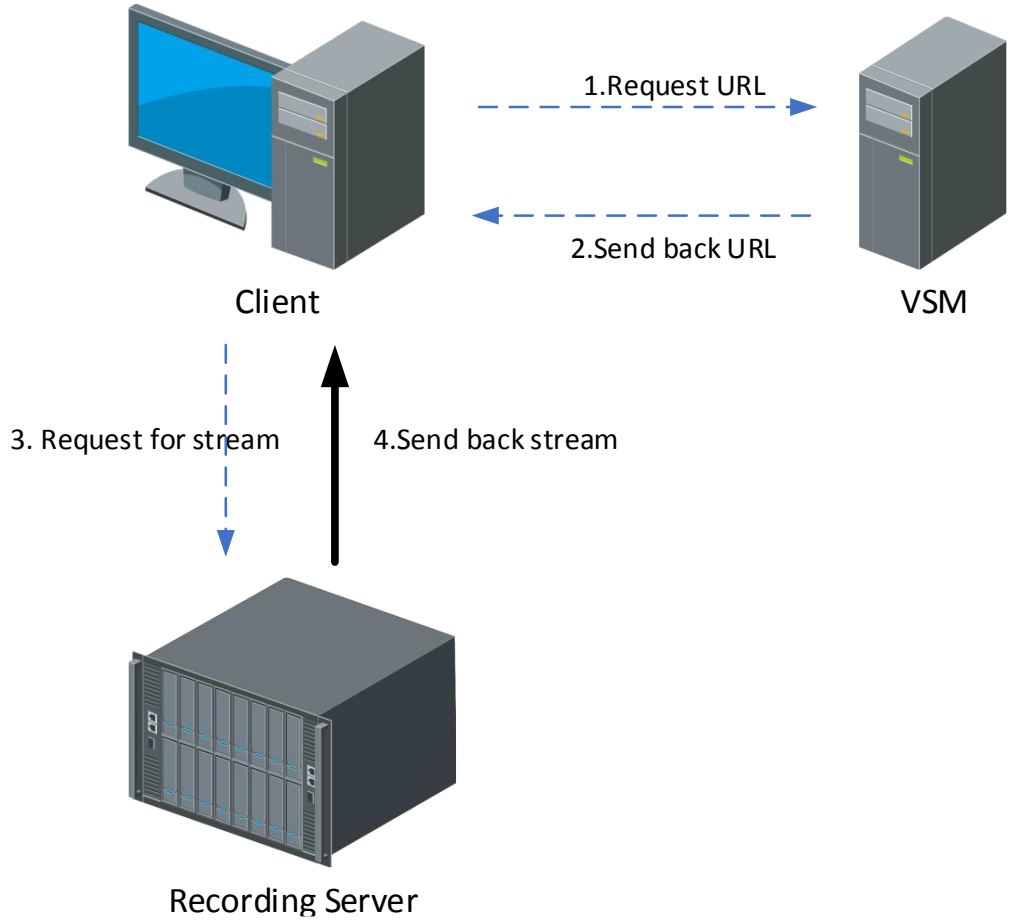
1. The SYS server sends the recording schedule (time-based recording schedule and event-based recording schedule) to the recording server.
2. The recording server sends a request to the camera for obtaining the stream according to the recording schedule.
3. The camera sends back the corresponding stream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

Note: When manual recording is performed on the Control Client, the preceding steps are triggered manually, but not triggered by recording schedule.

D. Playback of Video in Recording Sever

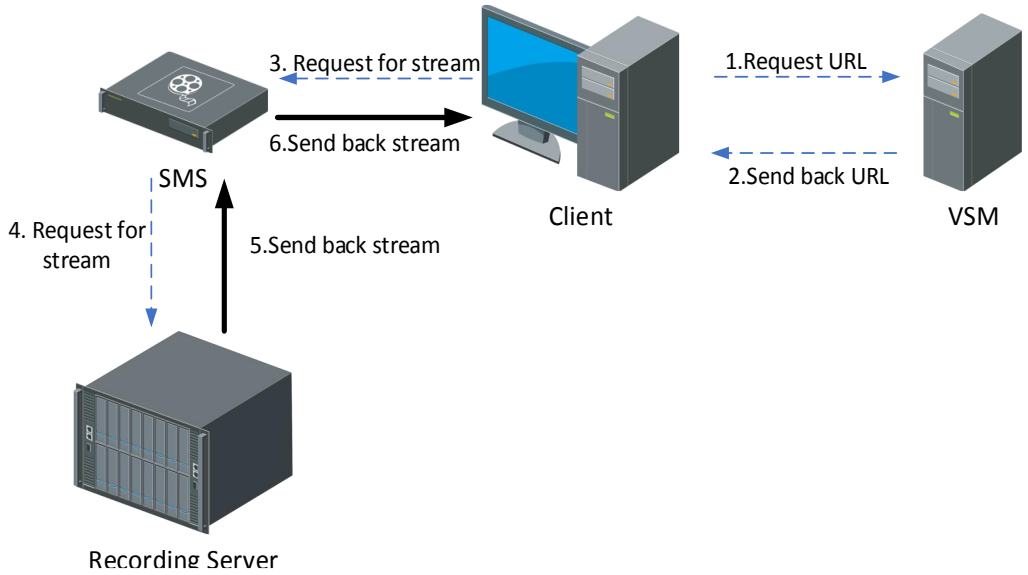
There are two modes for playing back video from recording server: The client obtains the stream directly from the recording server, and the client obtains the stream from the recording server via SMS. The signaling processes are as follows:

1. Playback of Video in Directly Connected Recording Server



1. The client sends a request to the SYS server for obtaining the stream URL.
2. The SYS server sends back the stream URL to the client.
3. The client sends a request to the recording server for obtaining the stream.
4. The recording server sends back the corresponding stream to the client according to the request.

2. Playback via Streaming Server

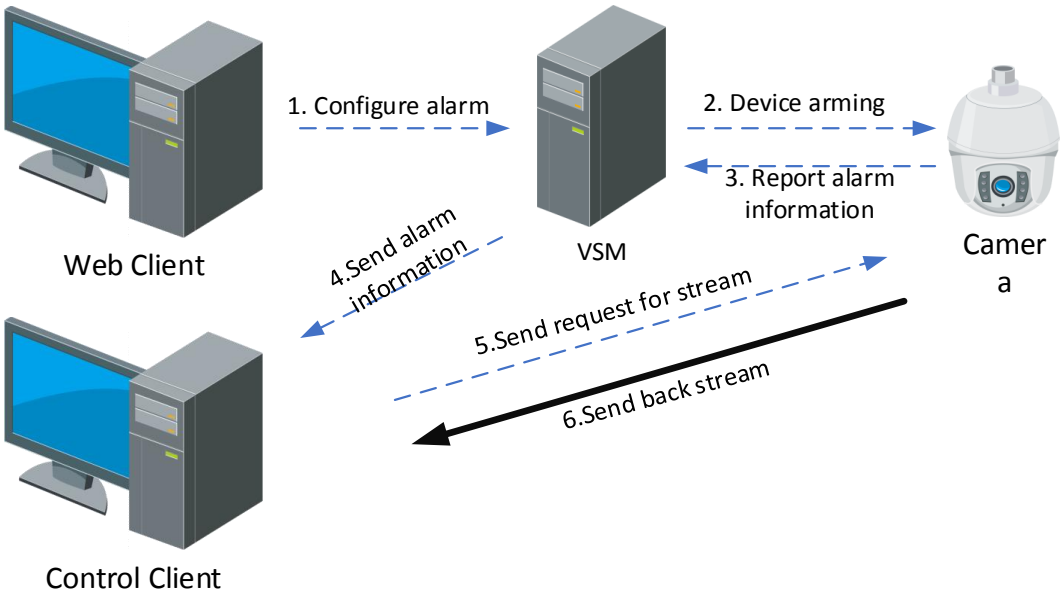


1. The client sends a request to the SYS server for obtaining the stream URL.
2. The SYS server sends back the stream URL to the client.
3. The client sends a request to SMS for obtaining the stream.
4. The SMS forwards the request to the recording server for obtaining the stream.
5. The recording server sends back the corresponding stream to the SMS according to request.
6. The SMS forwards the corresponding stream to the client.

2.9.4 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:

A. Obtain Alarm Related Stream Directly



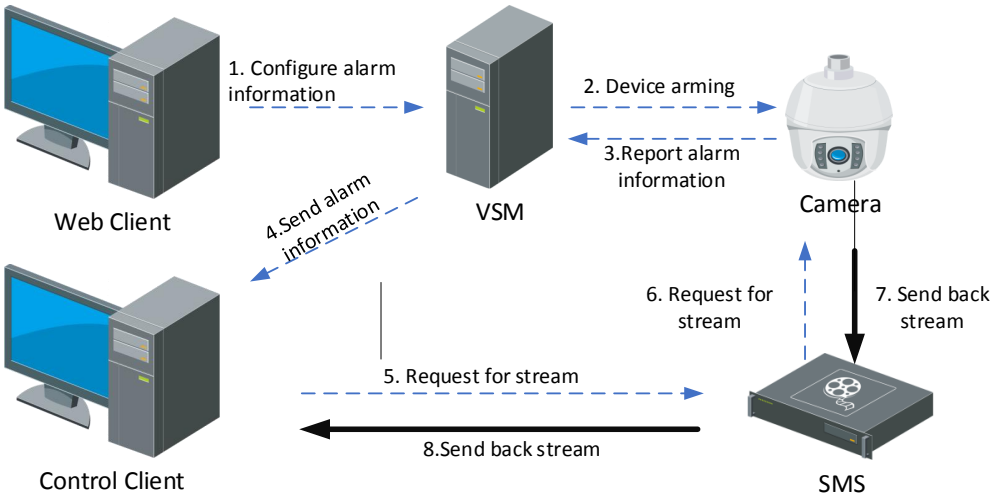
The process of alarm configuration is as follows:

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

The process of reporting an alarm is as follows:

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

B. Obtain 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 is sent to the SYS server.
2. The device is armed by the SYS server according the arming schedule.

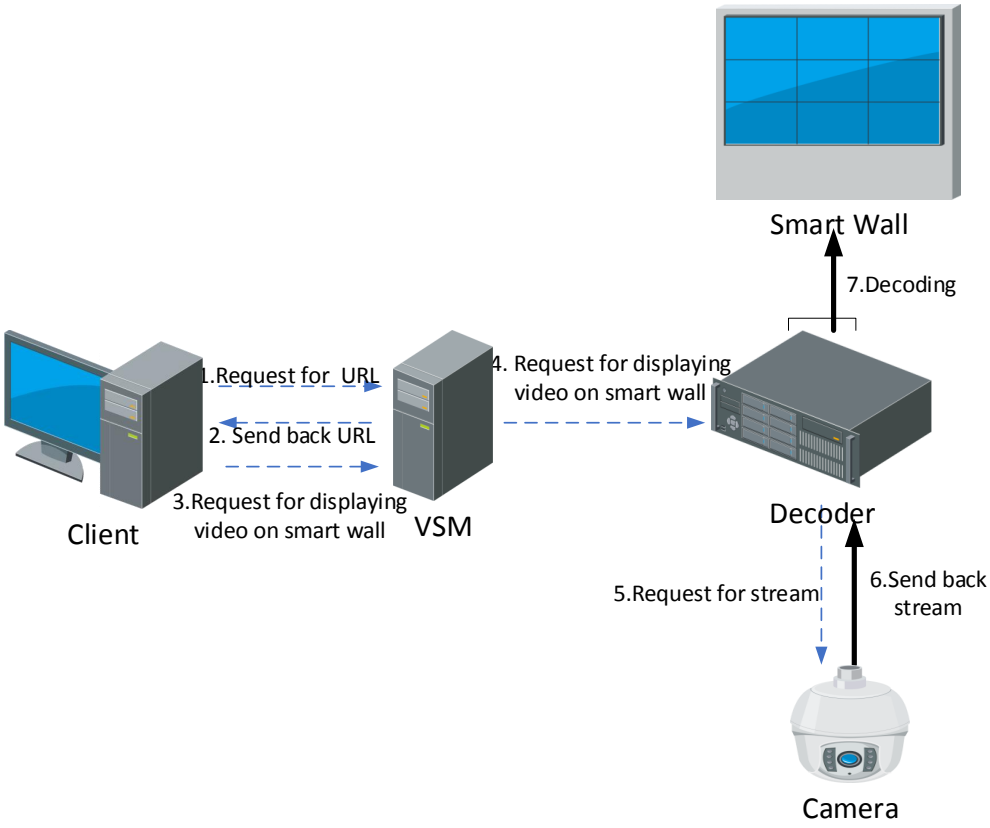
The process of reporting an alarm is as follows:

1. The device analyzes the obtained stream. If an alarm is triggered, the device reports an alarm to the SYS server.
2. The SYS server sends the alarm information to the Control Client.
3. If the linkage of live view or playback for the alarm is configured, the Control Client sends a request to the SMS for obtaining the stream.
4. The SMS forwards the request to the camera for obtaining the stream.
5. The camera sends back the corresponding stream to the SMS according to the request.
6. The SMS forwards the stream to the Control Client.

2.9.5 Smart Wall

A. Display Video on Smart Wall

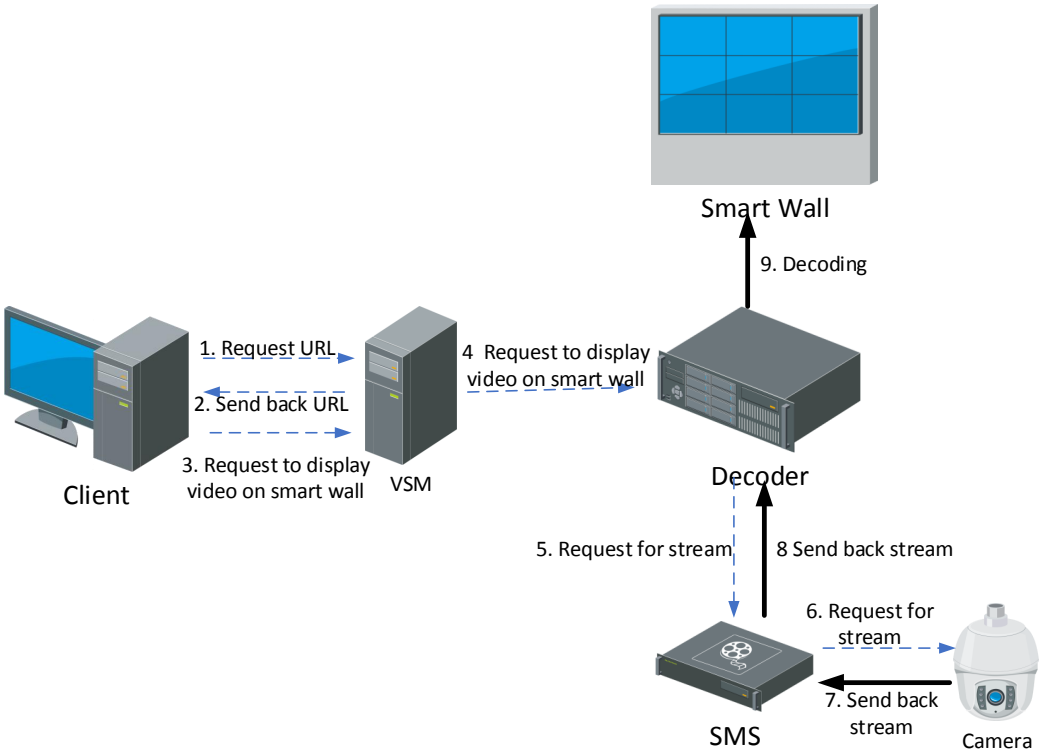
1. Display Video of Directly Connected Device on Smart Wall



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

1. The Smart Wall Client sends a request to the SYS server for obtaining the URL information (including the smart wall information and device information).
2. The SYS server sends back the URL information to the Smart Wall Client.
3. The Smart Wall Client sends a request to the SYS server to display the video on the smart wall.
4. The SYS server forwards the request to the decoder to display the video on the smart wall.
5. The decoder sends a request to the device for obtaining the stream.
6. The device sends back the corresponding stream to the decoder.
7. The decoder decodes the obtained stream and displays the video on the smart wall.

2. Display Video on Smart Wall via Streaming Server

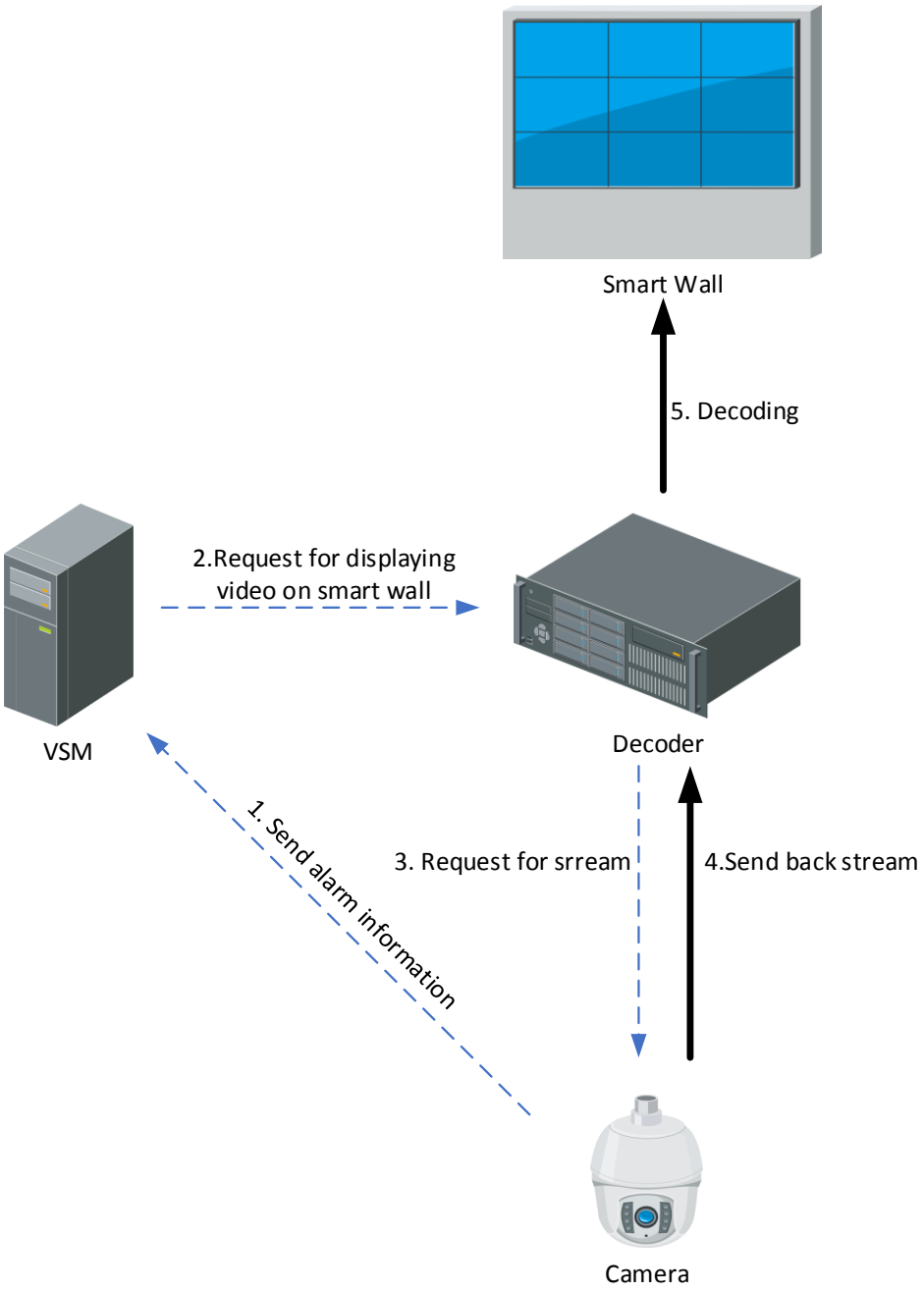


If the decoder obtains the stream via SMS, the signaling process is as follows:

1. The Smart Wall Client sends a request to the SYS server for obtaining the URL information (including the smart wall information and device information).
2. The SYS server sends back the URL information to the Smart Wall Client.
3. The Smart Wall Client sends a request to the SYS server to display the video on the smart wall.
4. The SYS server forwards the request to the decoder to display the video on the smart wall.
5. The decoder sends a request to the SMS (Streaming Server) for obtaining the stream.
6. The SMS forwards the request to the device for obtaining the stream.
7. The device sends back the corresponding stream to the SMS.
8. The SMS forwards the stream to the decoder.
9. The decoder decodes the obtained stream and displays the video on the smart wall.

B. Display Alarm Video on Smart Wall

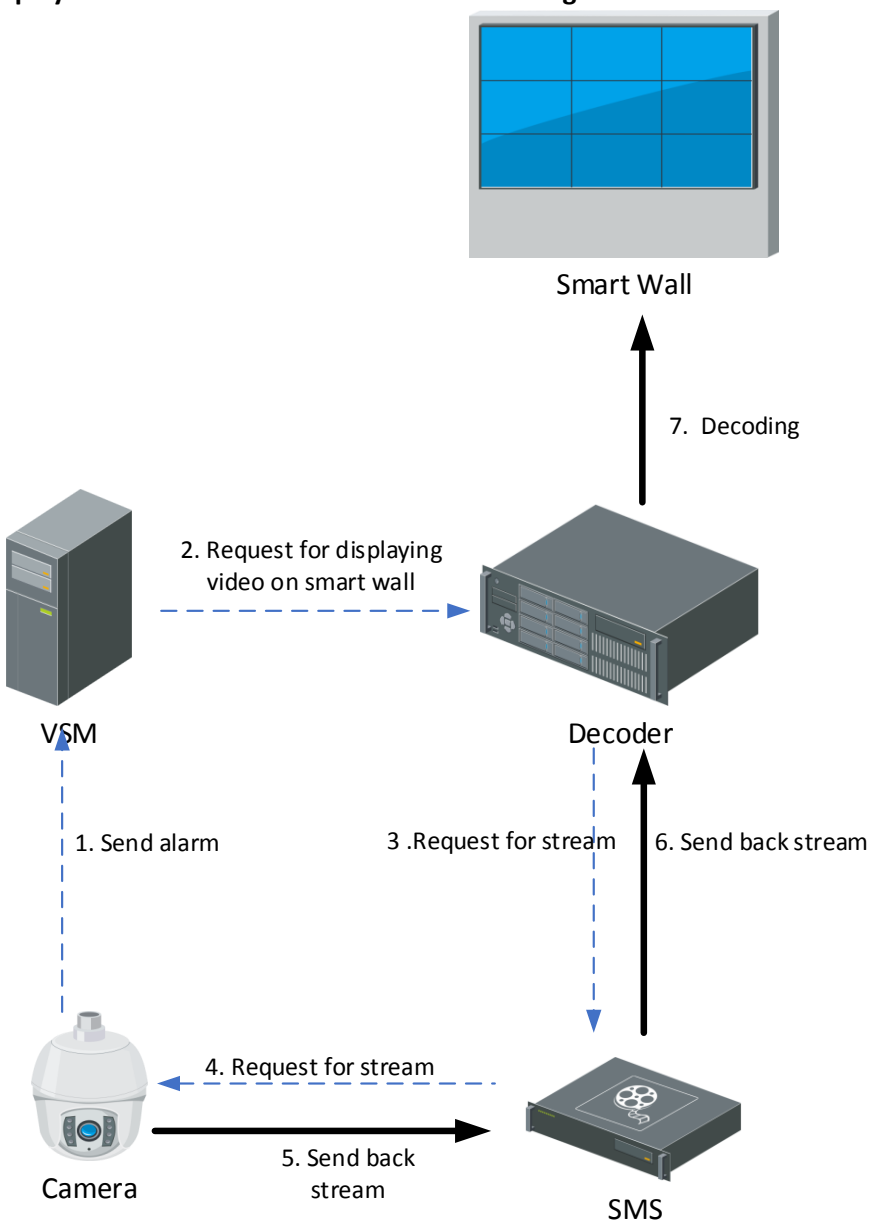
1. Display Alarm Video of Directly Connected Device on Smart Wall



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

1. The camera analyzes the obtained streams. If an alarm is triggered, the camera sends the alarm to the SYS server.
2. According to the alarm, the SYS server estimates whether the video of the camera need to be displayed on the smart wall. If yes, the SYS server sends a request to the decoder to display video on smart wall.
3. The decoder sends a request to the corresponding camera for obtaining the alarm video stream.
4. The camera sends back the stream according to the corresponding request.
5. The decoder decodes the obtained stream and displays the video on the smart wall.

2. Display Alarm Video on Smart Wall via Streaming Server

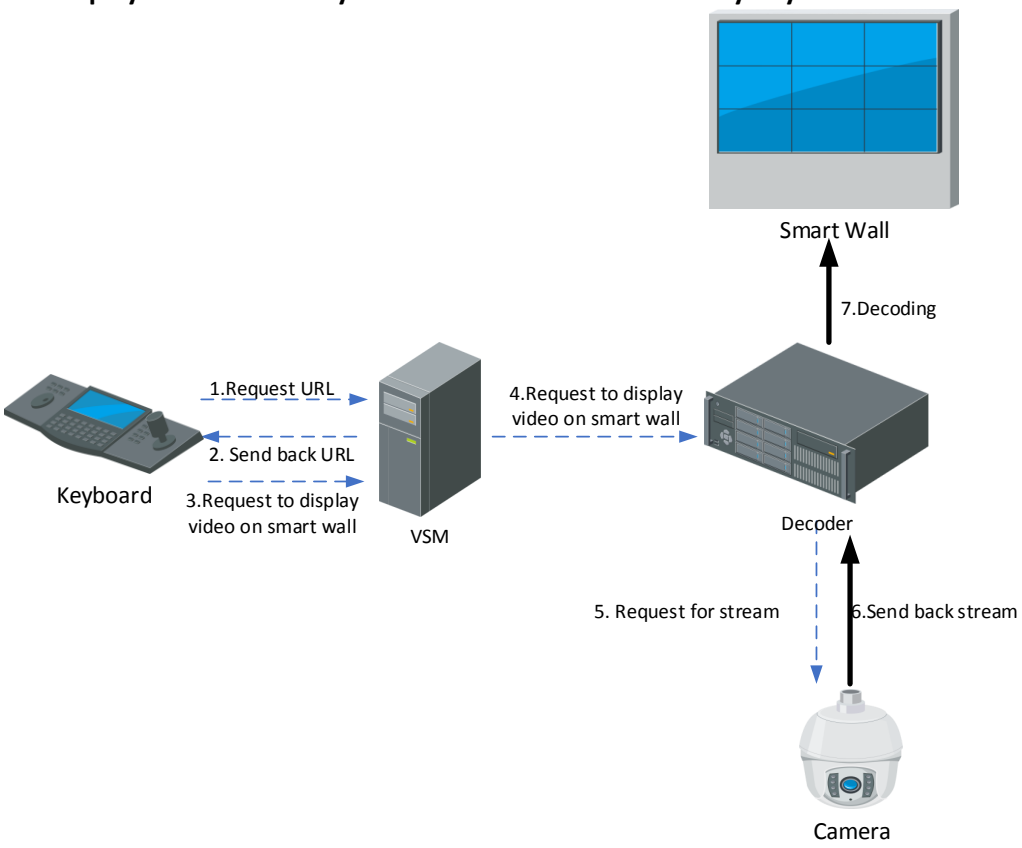


The process of displaying alarm video of device on smart wall via SMS is as follows:

1. The camera analyzes the obtained streams. If an alarm is triggered, the camera sends the alarm to the SYS server.
2. According to the alarm, the SYS server estimates whether the video of the camera need to be displayed on the smart wall. If yes, the SYS server sends a request to the decoder to display video on smart wall.
3. The decoder sends a request to the SMS (Streaming Server) for obtaining the stream.
4. The SMS forwards the request to the corresponding camera for obtaining the stream.
5. The camera sends back the stream to the SMS according to the corresponding request.
6. The SMS forwards the obtained streams to the decoder.
7. The decoder decodes the obtained stream and display the video on the smart wall.

C. Display Video Controlled by Keyboard on Smart Wall

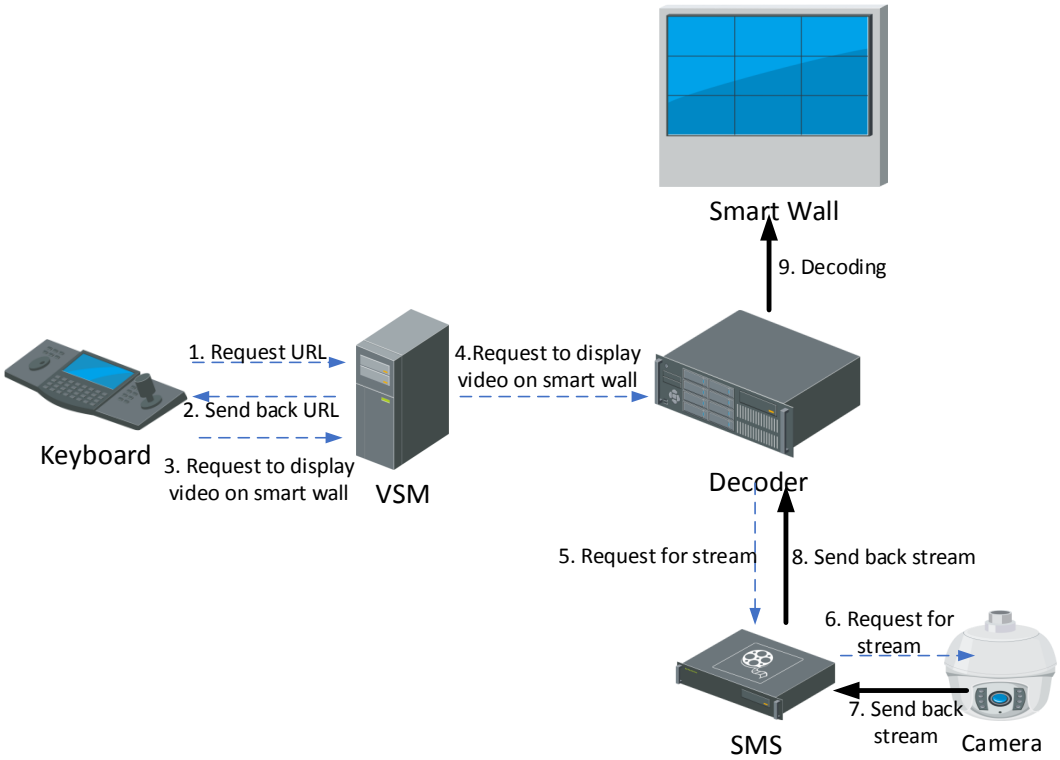
1. Display Video of Directly Connected Device Controlled by Keyboard on Smart Wall



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

1. The keyboard sends a request to the SYS server for obtaining the URL information (including the smart wall information and device information).
2. The SYS server sends back the URL information to the keyboard.
3. The keyboard sends a request to the SYS server to display the video on the smart wall.
4. The SYS server forwards the request to the decoder to display the video on the smart wall.
5. The decoder sends a request to the device for obtaining the stream.
6. The device sends back the corresponding stream to the decoder.
7. The decoder decodes the obtained stream and displays the video on the smart wall.

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

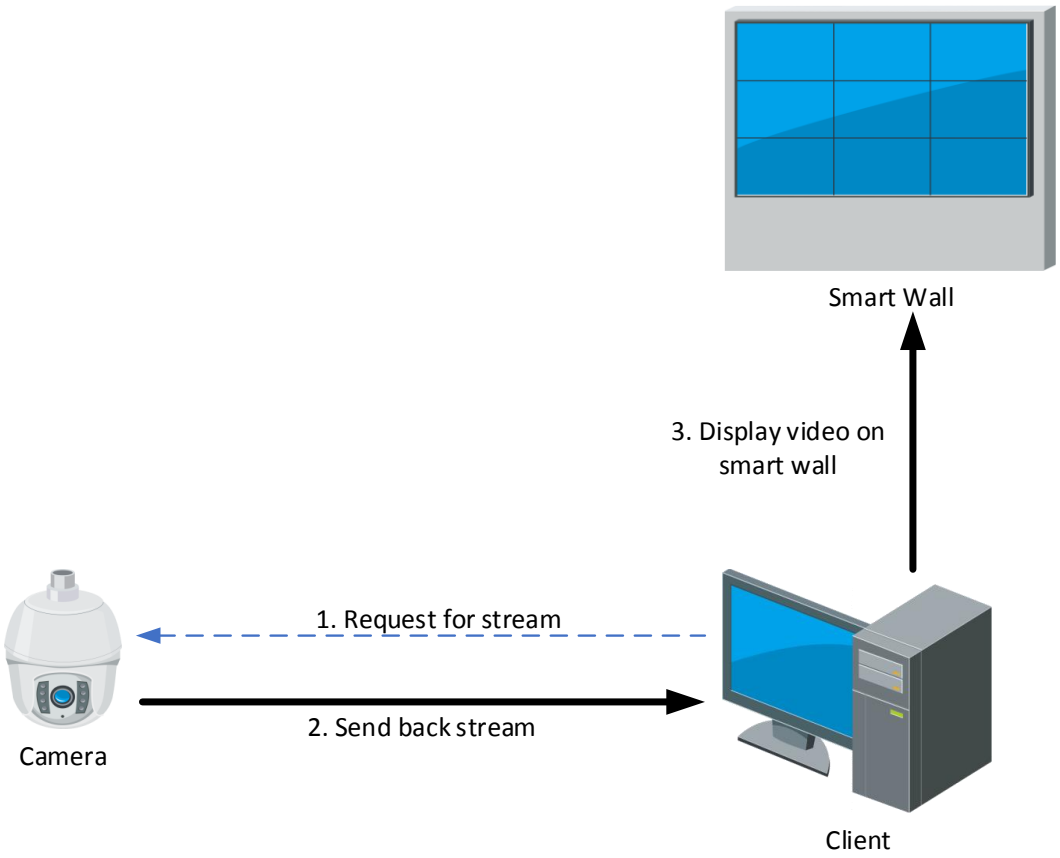


If the decoder obtains the stream via SMS, the signaling process is as follows:

1. The keyboard sends a request to the SYS server for obtaining the URL information (including the smart wall information and device information).
2. The SYS server sends back the URL information to the Smart Wall Client.
3. The keyboard sends a request to the SYS server to display the video on the smart wall.
4. The SYS server forwards the request to the decoder to display the video on the smart wall.
5. The decoder sends a request to the SMS (Streaming Server) for obtaining the stream.
6. The SMS forwards the request to the device for obtaining the stream.
7. The device sends back the corresponding stream to the SMS.
8. The SMS forwards the stream to the decoder.
9. The decoder decodes the obtained stream and displays the video on the smart wall.

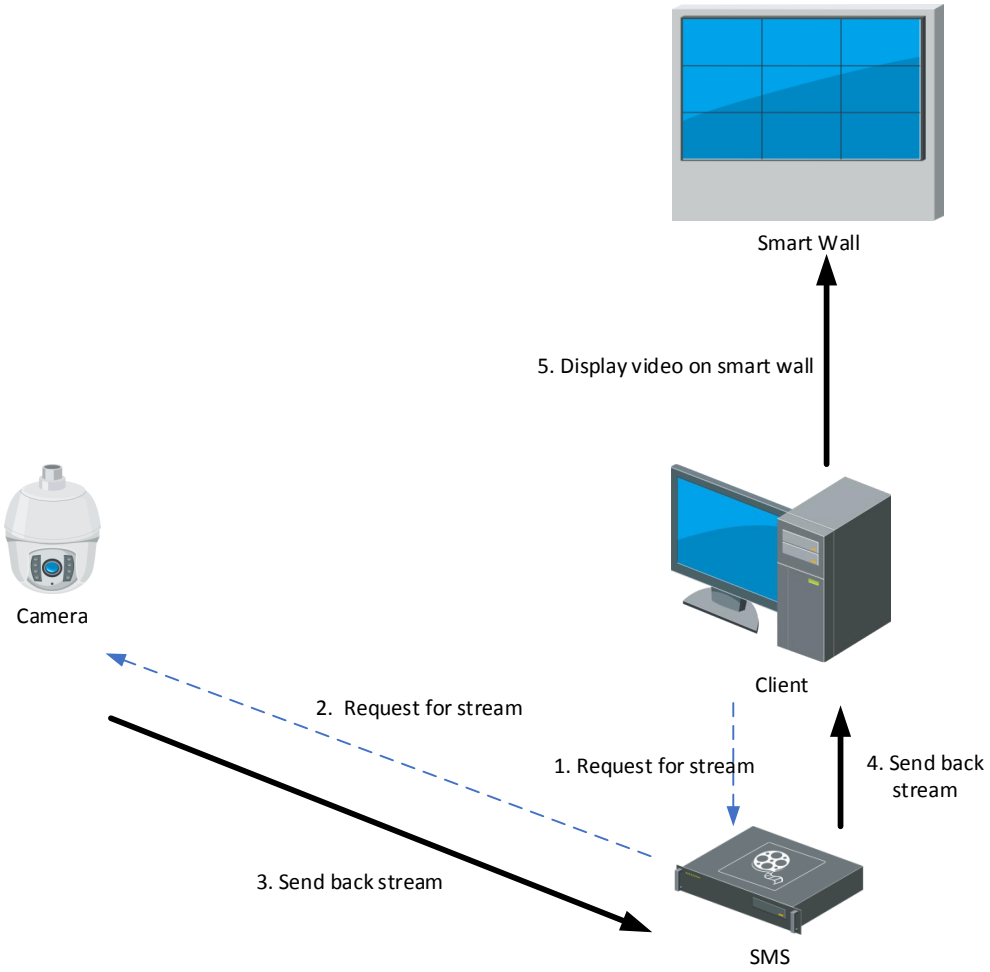
D. Display Video on Smart Wall (Graphic Card)

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



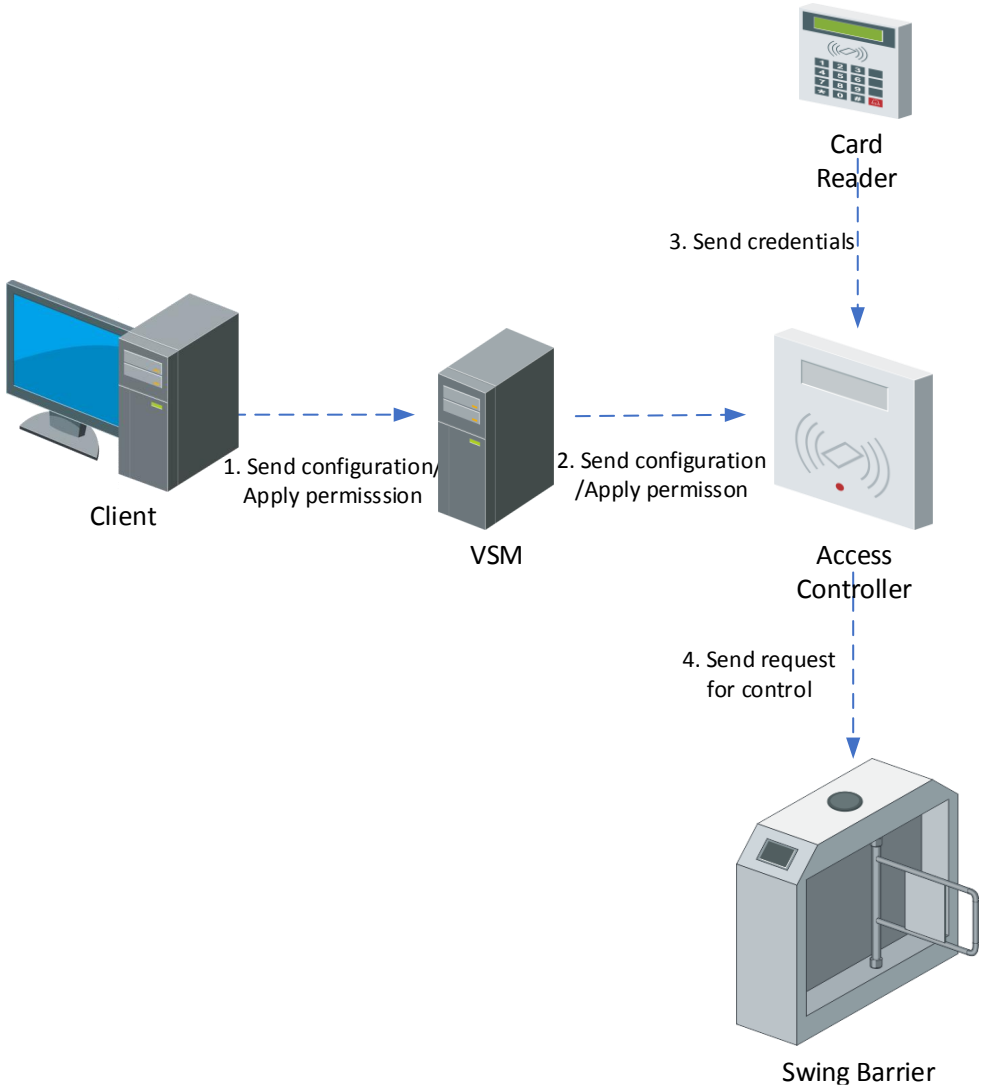
1. The client sends a request to the camera for obtaining the stream.
2. The camera sends back the corresponding stream to the client.
3. The client sends the stream to display on the Smart Wall (Graphic Card).

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



1. The client sends a request to the SMS (Streaming Server) for obtaining the stream.
2. The SMS forwards the request to the camera for obtaining the stream.
3. The camera sends back the corresponding stream to the SMS.
4. The SMS forwards the obtained stream to the client.
5. The Client sends the stream to display on the Smart Wall (Graphic Card).

2.9.6 Access Control

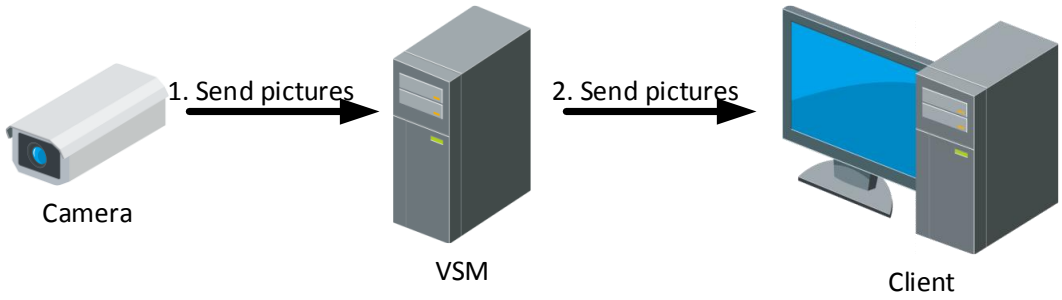


The signaling process of access control and management is as follows:

1. The Web Client sends an access control configuration command (including personnel permission, device configuration and event configuration) to the SYS server.
2. The SYS server sends the configuration command to the device.
3. The card reader obtains the corresponding instruction, and sends the credential information to the access controller.
4. The access controller sends the control request to the swing barrier according to the obtained instruction to control the switch status of the swing barrier.

2.9.7 ANPR

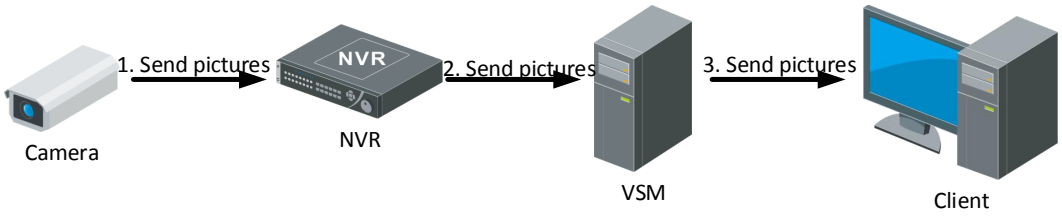
A. View Pictures Captured by ANPR Camera



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

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

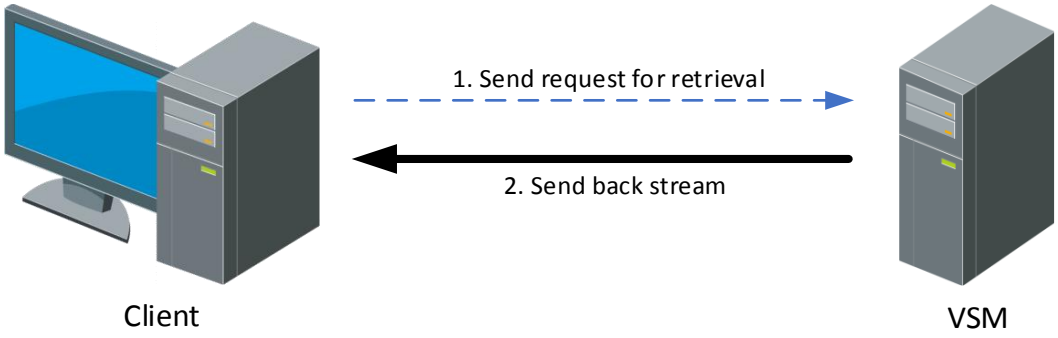
1. The ANPR camera captures the picture, and uploads the picture to the SYS server.
2. The SYS server sends the obtained picture to the Control Client for display.



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

1. The ANPR camera captures the picture, and uploads the picture to the NVR.
2. The NVR sends the obtained picture to the SYS server.
3. The SYS server sends the obtained picture to the Control Client for display.

B. Retrieval Pictures Stored in SYS Server

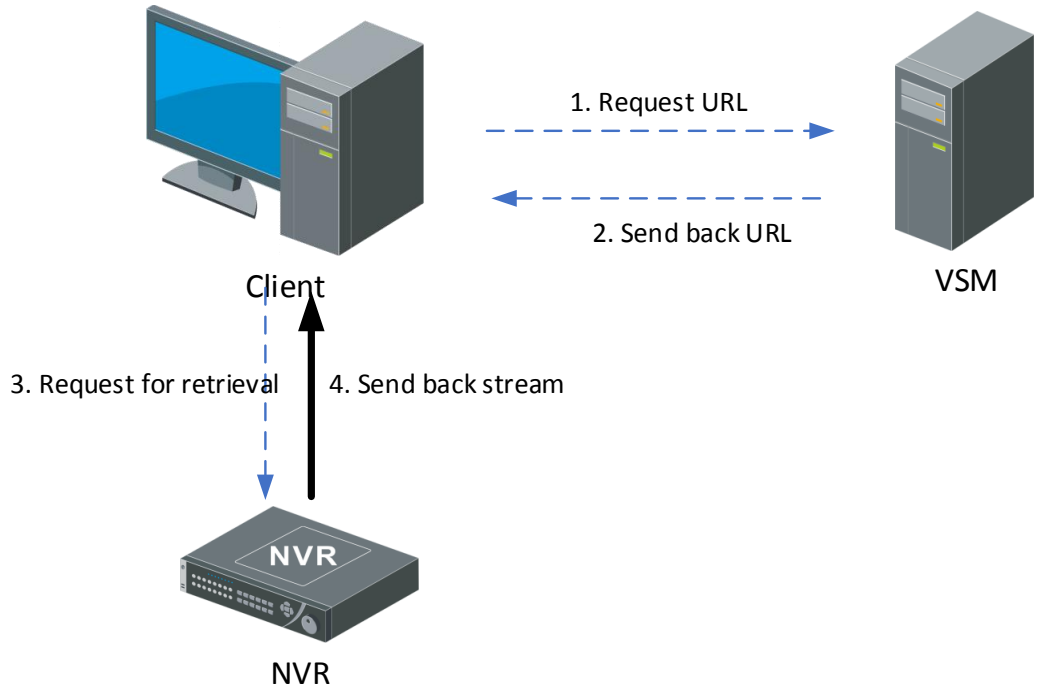


If the ANPR pictures is stored in the SYS server, the signaling process of ANPR picture retrieval and display is as follows:

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

C. Retrieval Pictures Stored in NVR

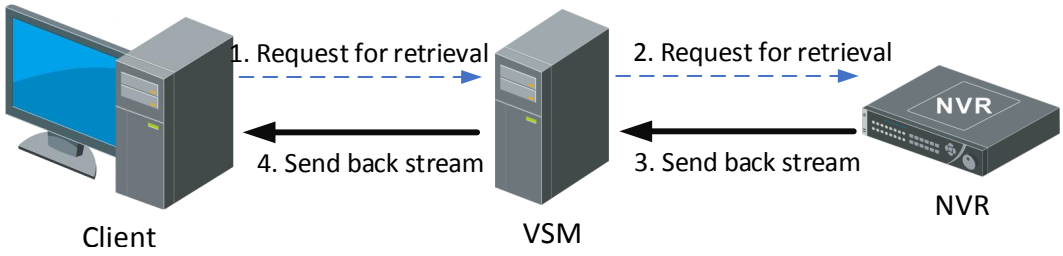
1. Client and NVR are in the Same LAN



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:

1. The Control Client sends a request to the SYS server for obtaining the NVR URL information.
2. The SYS sends the corresponding URL information to the Control Client.
3. According to the obtained URL information, the Control Client sends an instruction to the NVR for obtaining the pictures captured by ANPR camera.
4. The NVR sends back the corresponding pictures to the Control Client according to the obtained instruction.

2. 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:

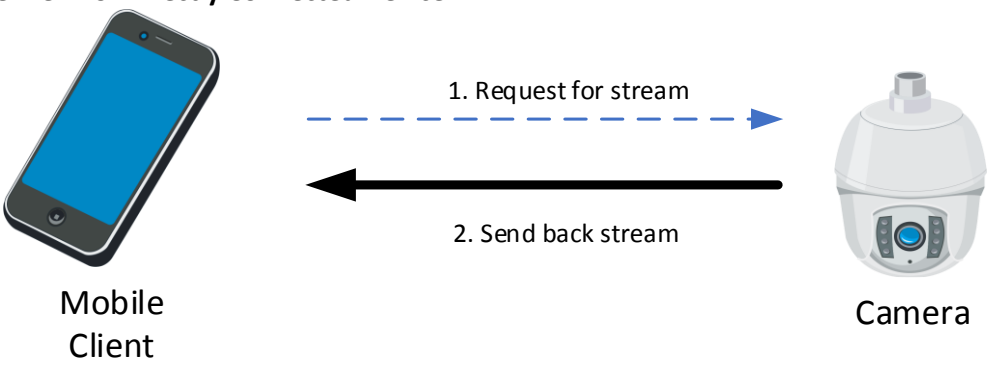
1. The Control Client sends a request to the SYS server for picture retrieval.
2. The SYS server sends the retrieval request to the NVR.
3. The NVR sends back the picture captured by ANPR camera to SYS server according to the request.
4. The SYS server forwards the obtained picture to the Control Client according to the actual instruction.

2.9.8 Mobile Client

A. Live view

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

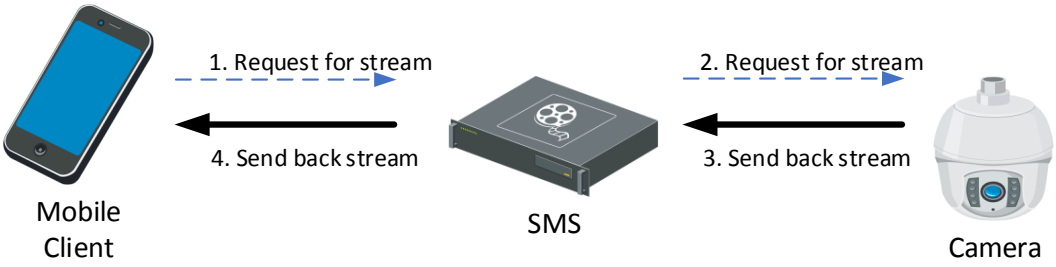
1. Live View for Directly Connected Device



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

1. The Mobile Client sends a request to the device for obtaining the stream.
2. The device sends back the corresponding stream to the Mobile Client.

2. Live View via Streaming Server

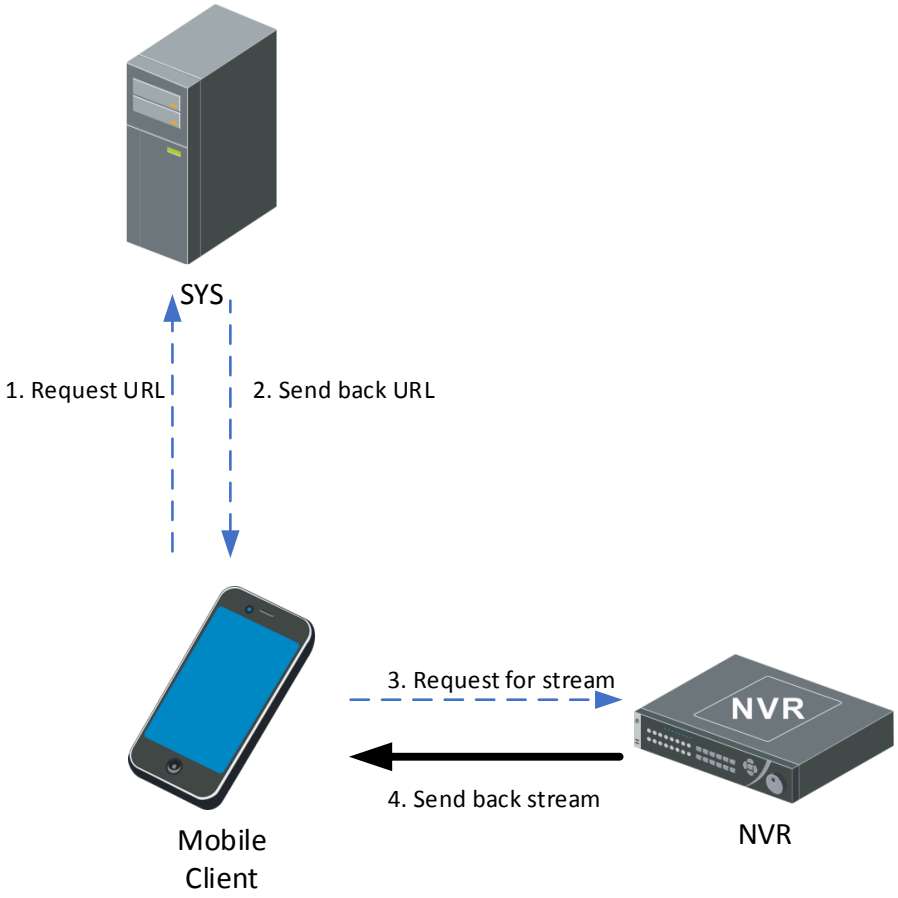


If the Mobile Client obtains the stream from the device via SMS (Streaming Server), the process is as follows:

1. The Mobile Client sends a request to the SMS for obtaining the stream.
2. The SMS forwards the request to the device for obtaining the stream.
3. The device sends back the corresponding stream to the SMS according to the request.
4. The SMS sends back the stream to the Mobile Client.

B. Playback

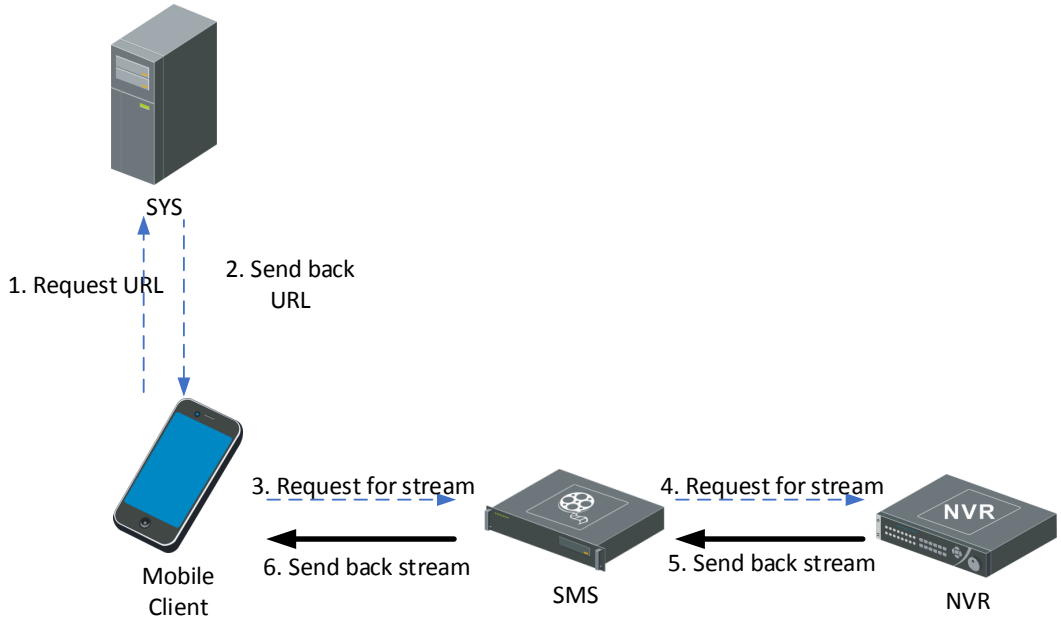
1. Playback of Video in Directly Connected Device



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

1. The Mobile Client sends a request to the SYS server for obtaining the stream URL.
2. The SYS sends the stream URL information to the Mobile Client.
3. The Mobile Client sends a request to the directly connected storage device for obtaining the stream.
4. The storage device sends back the corresponding stream of playback to the Mobile Client.

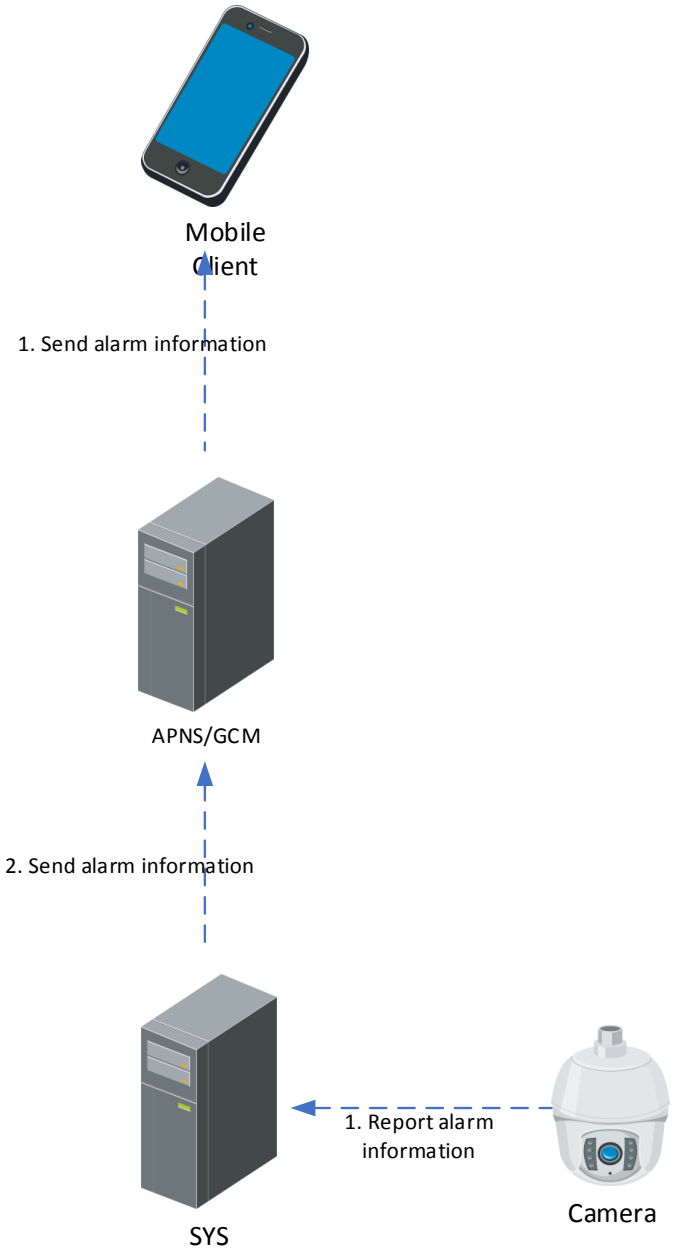
2. Playback via Streaming Server



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

1. The Mobile Client sends a request to the SYS server for obtaining the stream URL.
2. The SYS sends the stream URL information to the Mobile Client.
3. The Mobile Client sends a request to the SMS for obtaining the stream.
4. The SMS forwards the request to the NVR for obtaining the stream.
5. The NVR sends back the stream of playback to the SMS.
6. The SMS forwards the obtained stream to the Mobile Client.

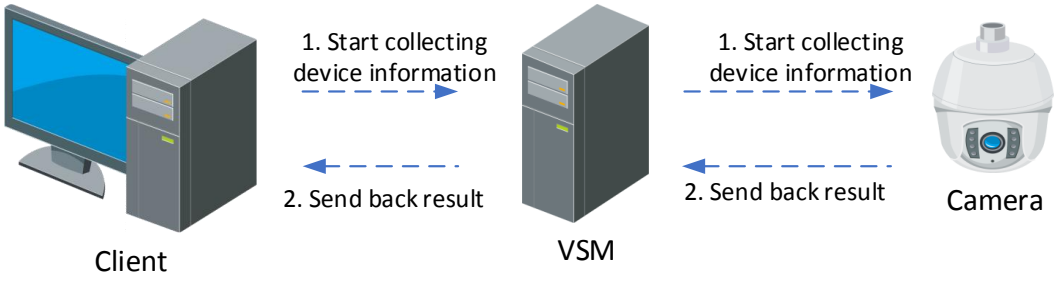
C. Alarm



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

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

2.9.9 Status Monitoring



The device status inspection consists of the following two situations: interaction between the client and the SYS server, and between the device and the SYS server.
The platform initiates inspection information every 3 minutes.

A. Interaction Between SYS Server and Device

1. The SYS server sends an inspection command to the device.
2. The device sends back the status of the device to the SYS server.

B. Interaction Between Client and SYS Server

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

2.10 System Security

2.10.1 Security Design Overview

The HikCentral Professional system consists of the server, client, service component, and platform SDK. The interaction between server and client, server and service component, server and platform SDK support HTTP and HTTPS.
To ensure the security of data storage, the sensitive data stored in the server is all encrypted. Sensitive information that does not need to be decrypted is all encrypted by irreversible encryption scheme. Sensitive information that needs to be decrypted is all encrypted by encryption scheme that can be decrypted.
The HikCentral Professional adopts the following encryption algorithms: RSA, AES, SHA, and MD5. All the encryption algorithms come from the standard open-source library OpenSSL-1.0.2K. The OpenSSL version will be updated according to the policies of Hikvision security lab.

2.10.2 System Security Solution

A. Access Protocol

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

B. Streaming Server Authentication

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

C. Login Authentication

The system authenticates users based on user name and password. The password strength and expiration time can be configured separately on the system. If the administrator forgets the login password, the system allows you to reset the password by license. To ensure the system security, the input information is hidden during password input.

During the transmission, the password is encrypted by RSA algorithm in HTTP mode, and the HTTPS internal encryption mechanism is used in HTTPS mode. In system login authentication, the verification code + user lock + IP address lock are used to prevent brute force cracking from malicious user, to improve the system security level.

Man-Machine Authentication: If an incorrect password is entered during the login, you need to 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. You 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.

D. Platform Access

After the client successfully logs in to the system, the server randomly generates 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 has a fixed lifetime. When a session carried by a client expires, the user needs to log in to the system again.

In HTTP mode, to ensure that the system is not attacked by replay attacks, each session must 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 is encrypted using AES.

E. Sensitive Information Processing

For sensitive information such as user name and password that are daily used, HikCentral Professional provides 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 is used to generate a random AES key for each login, to ensure that data is not easily stolen. In HTTPS mode, SSL certificate encryption is used.

For the sensitive information storage, HikCentral Professional provides 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 adopts 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 system user password is encrypted by SHA algorithm and stored in cipher text.

2.10.3 Security Audit Server

Supports access of Hikvision Security Audit Server, which is used to monitor the logs of the managed devices in the system. You can set event and alarm rules for the security audit server via the Web Client. When the logs of the managed devices are regarded as abnormal, an event or alarm will be triggered and you can receive the alarm via the Control Client. In this way, the system can monitor the running status of the managed devices by the security audit server, reaching the system security requirements.

2.11 Open Platform

2.11.1 Access Solution of Third-Party Devices

A. Introduction

HikCentral Professional provides access capabilities based on standard ONVIF protocol for the third-party devices. The third-party devices can connect to the HikCentral Professional via ONVIF protocol to implement the functionalities of live view, playback, PTZ control, video search, alarm, and so on.
To connect the third-party devices with HikCentral Professional, there are mainly two methods. One method is that, the third-party devices firstly connect to the Hikvision NVR, and then connect to HikCentral Professional via the NVR. The other method is that, the third-party devices directly connect to HikCentral Professional by configuring pStor, Hybrid SVN, or cloud storage. In the above two method, the NVR, pStor, Hybrid SVN, or cloud storage are used to save the video files, and the HikCentral Professional is used to manage and play the videos.

B. Overall Design

The server of HikCentral Professional contains multiple components for the access of the third-party devices. You can log in to, manage, and operate the third-party devices on HikCentral Professional via these components.

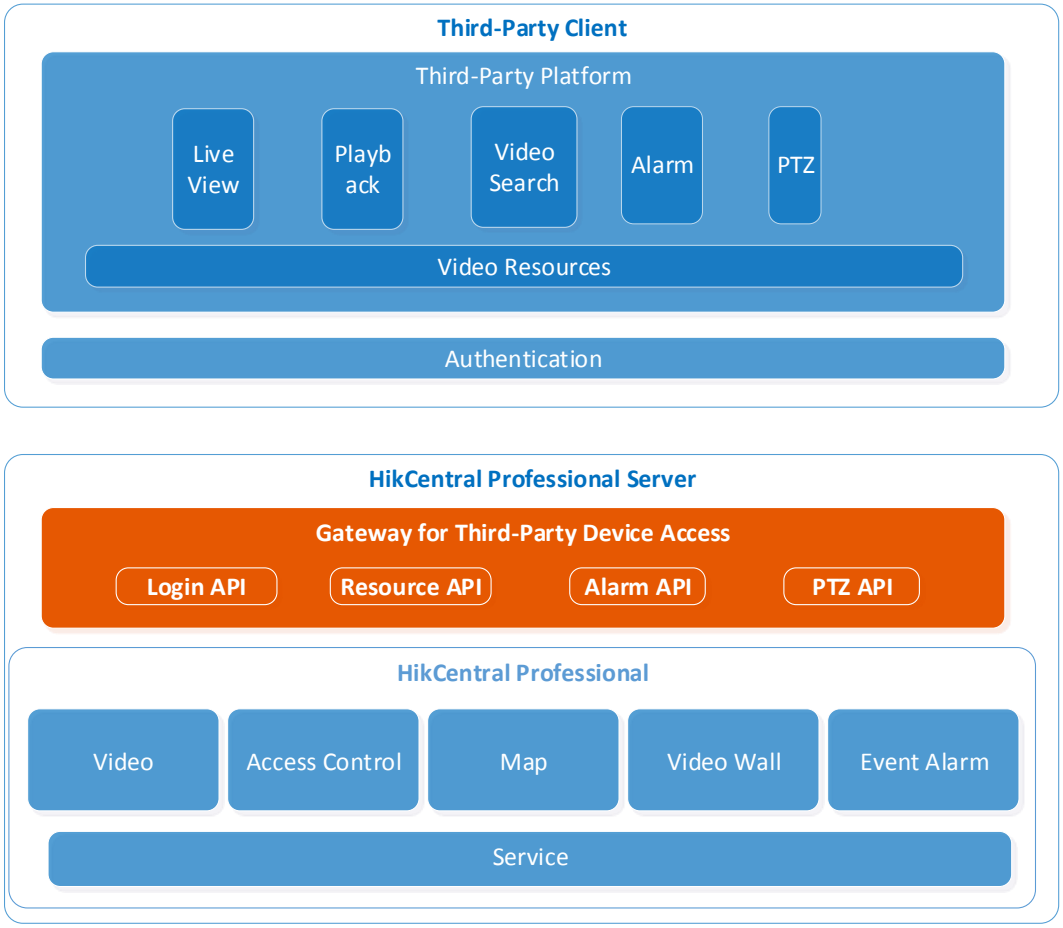


Figure 8-1 Overall Design Diagram

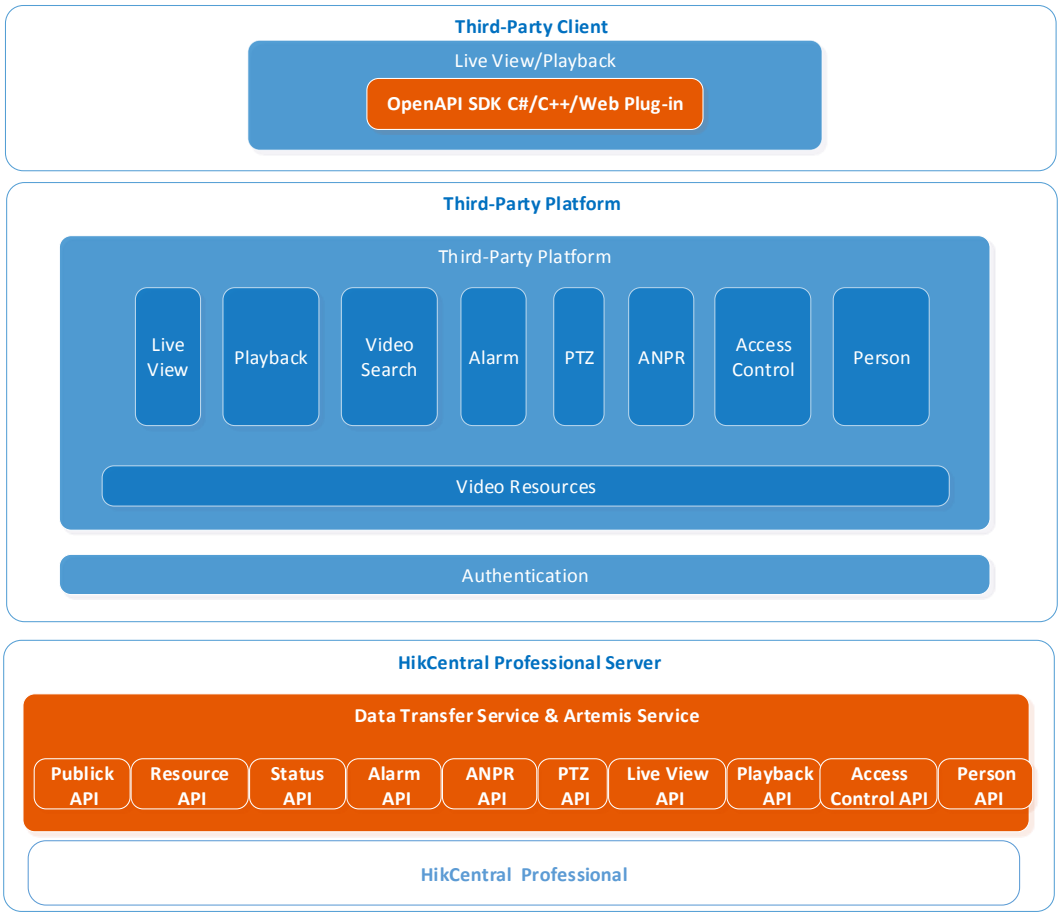
2.11.2 Integration Solution of Third-Party Platform

A. Introduction

HikCentral Professional provides OpenAPI for the connection between third-party platform and HikCentral Professional. The third-party platform can implement the core functionalities of HikCentral Professional via OpenAPI, such as video, alarm, resources, access control, and so on.

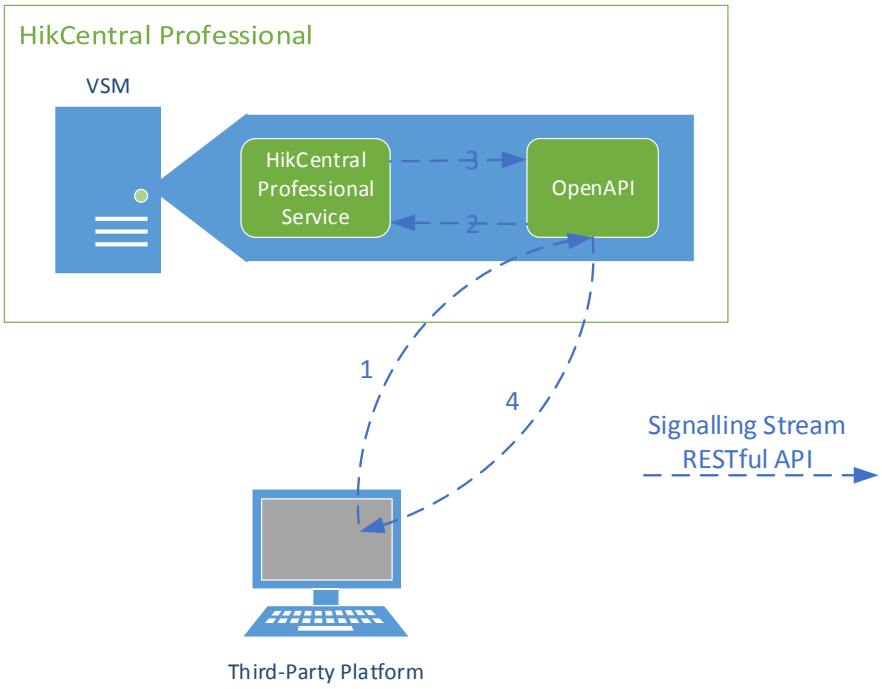
B. Overall Design

OpenAPI consists of Data Transfer Service, Artemis Gateway, and Video SDK. The Data Transfer Service converts the protocols between servers of HikCentral Professional and third-party platform. The Artemis Gateway provides the API protocol management, third-party integration management, and authentication. The Video SDK provides the capabilities of live view, playback, two-way audio, and so on, which helps the third-party client to integrate the video related functions quickly.

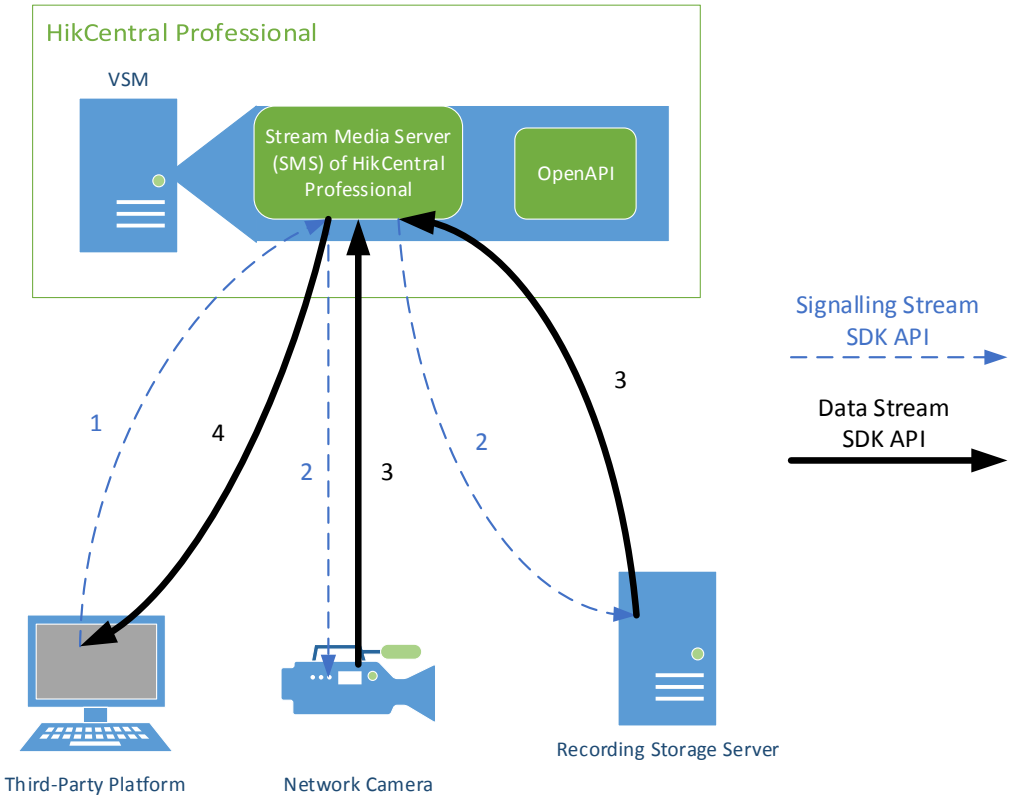


C. Network Topology

As there are multiple domain scenes deployed for HikCentral Professional services and OpenAPI, to ensure the stability of OpenAPI and the security of whole system, the OpenAPI and HikCentral Professional must be in same LAN (Local Area Network), but they can be installed in different computers or same computer.



The communication between the third-party platform and OpenAPI is based on RESTful protocol, and it is used for getting resources, operating the resources, and so on. Firstly, the third-party platform sends request command to OpenAPI service, and then the OpenAPI converts the command to support the internal protocol of HikCentral Professional and sends the converted command to HikCentral Professional server. The HikCentral Professional will send a response to OpenAPI after receiving and processing the request command. Finally, the OpenAPI converts the response to support OpenAPI protocol and sends the converted response to the third-party platform.



The above figure shows the interaction process between third-party platform and Video SDK, which realizes the live view and playback. Firstly, the third-party platform sends live view or playback request to HikCentral Professional, and then the Streaming Server (SMS) of HikCentral Professional finds the devices to start live view or playback. Finally, the video stream will also be returned to the third-party platform from the device via the SMS.

D. Overall APIs

The interaction and transmission of OpenAPI adopts RESTful protocol and it only supports HTTPS. The following table shows the API classes and the corresponding functional descriptions, for details, refer to HikCentral Professional OpenAPI_Developer Guide_V1.6.0.pdf.

API Class	Description
Public API	Provide public functions, such as getting version information of platform and so on.
Resource (Encoding Device) API	Provide functions related with encoding devices, such as management, refreshing, activation, and so on.
Resource (Server)	Provide functions related with servers, such as Streaming Server management, Storage Server management, and so on.
Logical Resource API	Provide functions related with logical resources, such as area management, camera management, door management, alarm input and output management, and so on.
Alarm API	Provide alarm functions, such as alarm configuration and receiving, and so on.
ANPR API	Provide ANPR functions, such as list configuration, vehicle passing record search, vehicle information settings and management, and so on.
Log Search API	Provide functions related with platform logs, such as alarm log search, and so on.

Status Detection API	Provide functions of camera status detection, device status detection, server, status detection, and so on.
PTZ API	Provide function related with PTZ control, such as preset, patrol, pattern, and so on.
Live View and Playback API	Provide functions of getting live view URL, playback URL, tag management, and so on.
Access Control API	Provide functions of opening door, closing door, person information management, searching for card swiping records, and so on.
Person API	Provide functions of getting person list, getting person information, and so on.

The API classes and functional descriptions of OpenAPI Video SDK are shown in the table below.

API Class	Description
Live View API	Provide functions of starting or stopping live view, stream type switch, capturing, audio control, recording, and so on.
Playback API	Provide functions of starting or stopping playing, pausing or resuming playback, reverse playback, fast or slow forward, capturing, audio control, searching or downloading video files, and so on.
Two-Way Audio API	Provide function of starting two-way audio between device and platform.

E. Installation Environment and Development Language

The OpenAPI must be installed on the computer with Window operating system.
For protocol integration, there is no development language limit; but for Video SDK integration, the development language should be C# or C++, or by developing a plug-in on web browser via some certain language.

END OF SECTION

Part 3 Functions

The content in this section describes the functions of HikCentral Professional. All the information hereinafter are for description and explanation only. The information contained here is subject to change, without notice, due to firmware updates or other reasons. For detailed instructions about these functions, please refer to the *User Manual of HikCentral Professional*.

3.1 General Functions

A. On initial set up and during first login on Web Client, Control Client, and Mobile Client, the Administrator is forced to create a complex password for future logins sessions.
The new password shall reach Medium password strength

B. Manage Devices on Web Client

1. Add encoding devices, access control devices, elevator control devices, video intercom devices, security control devices, dock stations, network transmission devices, display screens, etc.
2. Upgrade device firmware via Web Client or EZVIZ Cloud Service
   a. Simultaneous upgrade
   b. Set upgrade schedule
3. Restore/reset device password
4. Manage Application Data Server
   a. Add Application Data Server by IP address
   b. Add an Application Data Standby Server
   c. Encrypt the data transmitted between the Application Data Server and other services or clients
   d. Set Threshold of Failure Status
   e. Automatically/manually Switch to Application Data Standby Server if the Application Data Server fails
   f. Perform maintenance of server fault
5. Manage Security Audit Server
   a. Add security audit server by IP address
   b. Enable WAN access
   c. Link encoding devices with security audit server for audit

C. Logical View: Area Management on Web Client

1. Create up to 3,000 areas with 5 levels, and up to 100,000 areas for Remote Site Management
2. Add up to 256 resources (including cameras, doors, elevators, alarm inputs, alarm outputs, UVSS, radars, and third-party integrated resources) respectively to one area and 10,000 by distributed deployment in total per SYS
3. Add resources to other area, and display resources in sub-areas
4. Synchronize resource names from devices and apply device names to devices
5. Set resource groups in areas, including:
   a. Alarm groups
   b. People analysis groups (people counting groups and entry & exit counting groups)
   c. Heat analysis groups
   d. Pathway analysis groups
   e. Person feature analysis groups
   f. Multi-door interlocking groups

g. Anti-passback groups
h. Emergency operation group
i. Security control partitions

6. Map management
   a. Shall have the ability to configure related map settings for current site:
      - Shall upload picture or import existing map of other area to link related map to the area
      - Shall edit picture or map name
      - Shall unlink the map to cancel the linkage between the map and area
      - Shall view the map in full-screen mode
      - Shall zoom in or zoom out the map
      - Shall adjust the map area for view and switch between GIS map and related map
      - Shall add cameras as hot spots on the related map
      - Shall adjust the hot spot location, edit, and delete hot spot
      - Shall add a map to another map as a hot region
      - Shall adjust hot region location, edit hot region, and delete hot region
      - Shall add/edit/delete labels on map, and adjust label location
      - Shall display the following resources on the map: camera, alarm input, alarm output, access point, site, UVSS, hot region, and label
   b. Shall have the ability to configure GIS map settings of current site:
      - Shall add sites/cameras/access points/alarm inputs/alarm outputs/UVSSs on GIS map to show the geographic location
      - Shall locate cameras on map automatically according to the GIS location information settings on the device
      - Shall add up to 4 UVSS(s) to each SYS
      - Shall set GPS location for hot spot and hot region
      - Shall set icon style and name color, and add remark to GIS map
      - Shall add/delete/edit hot regions
      - Shall add/delete/edit labels
      - Shall choose to display the following resources on the map: camera, alarm input, alarm output, access point, site, UVSS, hot region, and label
      - Shall search geographic location in GIS map

D. Security Settings on Web Client

1. Shall create user profile groups defined as Roles
2. Role shall restrict user profile access for administration functions defined as logical areas
3. Shall set the role's effective period
4. Shall set the permission schedule
5. Shall set the role status as active or inactive
6. Shall set resource access for the following types:
   a. Logical resource:
      - Access all resources in shown area
      - Access specified resources in shown area
   b. Encoding device (NVR, Network Camera)
   c. Decoding device
   d. Access control device
   e. Video intercom device
   f. Elevator control device

g. Security control device
h. Dock station
i. Network transmission device
j. Smart wall
k. Display screen
l. Servers
m. Person list
n. Face Comparison Group
o. Dock Station Group
p. Visitor List
q. Vehicle List
r. Custom additional info.
s. User-defined event
t. User log

7. Shall set the following user permission:
   a. Resource permission
   b. Configuration permission
   a. Operation permission
8. Shall support general and rental application scenario
9. Shall set management permissions for every module. Users without module permissions cannot edit permission settings through security module
10. Shall manage the permission of checking, adding, deleting, editing of each module on the Control Client
11. Shall support the 'copy from' function to copy features of the existing roles
12. Users
    a. Create user name
    b. Default password or set a password for initial login and then user must create a unique password
    c. Set expiry date of user profile
    d. Email address setting: if the user forgets his/her password, he/she can reset password via email
    e. Select user status as active or inactive
    f. For each user, restrict concurrent logins
    g. PTZ control permission level: notify the user with lower PTZ permission that PTZ control has been appropriated by another user with higher permissions
    h. Assign roles to the user
    i. View role list and detailed information
    j. Import domain users (group)
       - Select importing mode as user or group
       - Select domain users
       - Configure domain users
       - Restrict concurrent logins
       - Set PTZ control permission
       - Assign role to the domain user
       - View role list and detailed information
    k. Force logout
    l. Select users and activate/inactivate them in a batch

13. Synchronize domain users
14. Active Directory Integration
    a. Import Windows domain users and assign them to roles
    b. Domain user login supported in the Control Client and Mobile Apps (iOS and Android)
15. Security Settings for Users
    a. Lock IP address after failed password attempts
        - Configurable: 1 to 5 attempts
        - Lock for: 10, 20, 30, 40, 50, or 60 minutes
    b. Minimum password strength: Shall have the ability to select from the following:
        - Weak: a combination of at least 8 characters including two types of characters among lowercase letters, uppercase letters, numbers, and special characters.
        - Medium: a combination of at least 8 characters including two types of characters among lowercase letter, uppercase letters, numbers, and special characters. The combination cannot be (number + lowercase letters) or (number + uppercase letters)
        - Strong: a combination of at least 8 characters including a minimum of three types of characters among lowercase letters, uppercase letters, numbers, and special characters
    c. Shall enable Maximum Password Age
        - Configurable: 1 months, 3 months, 6 months or “custom” number of days ranging from 1 to 365
    d. Shall have the ability to auto lock Control Client after a time period of inactivity on Control Client
        - Configurable: Lock in 10 minutes, 20 minutes, 30 minutes or “custom” number of minutes ranging from 10 to 30

E. System and Maintenance on Web Client

1. Shall set the following normal parameters:
    a. Site name
    b. Enable GIS map function and support online map (configure the map API URL) and offline map, and set the icons of the hot region, camera, access point, alarm input, alarm output, UVSS, etc., on the map
    c. Set first day of week
    d. Set temperature unit as Celsius, Fahrenheit, or kelvin
    e. Display or hide mask related functions. After disabled, all the functions about masks will be hidden on Web Client, Control Client, and Mobile Client
    f. Server usage thresholds: Set event/alarm for notification if the CPU usage or RAM usage approaches the pre-determined threshold and lasts for certain duration
    g. Set printers
2. Shall set the following network parameters:
    a. NTP settings: shall be able to be set for syncing the time between the SYS and the NTP server
    b. Active directory: If you have the AD (Active Directory) domain controller which contains the information (e.g., user data, computer information), you shall be able to configure the settings to get the related information. In this way, you can add the users that belong to an organization unit (e.g., a department of your company) to HikCentral Professional conveniently
        - Link person information (email and custom additional information items by default)

c. Receiving generic event
d. For the system without a Remote Site Management module (as we called Remote Site), it shall be able to register to the Central System after enabling this function and setting the Central System's parameters
e. For the a system without a Remote Site Management module (as we called Remote Site), it shall be able to register to the Central System after enabling this function and setting the Central System's parameters
f. Allow ISUP registration or not and allow devices of ISUP version 2.6 or 4.0 to access the system or not
g. Set a static IP address or domain name for the WAN access, and set the ports
h. Set default waiting time for the configuration on the Web Client. The configuration will be regarded as failure if no response within the configured timeout time
i. Set device access mode as automatically mode or proxy
j. Select the IP address for receiving information from devices by ONVIF protocol and ISUP protocol. Set the NIC of the current SYS server or enter an IP address manually

3. Shall set the following storage parameters:
   a. Storage on SYS server:
      - Select storage location
      - Restrict quota for pictures
      - Set storage quota
   b. Set the data recorded duration for the follow types of records:
      - Received events
      - Service error logs
      - Service warning logs
      - Service information logs
      - Recording tags
      - Face comparison data
      - Video analysis data
      - Person access records
      - Device recorded data: Including data recorded by the access control devices, elevator control devices, video intercom devices, and alarm inputs of these devices, and other records except access records on the doors.
      - Attendance records
      - Visitor registration records
      - Vehicle passing records
      - Vehicle entering/exiting records
      - Radar tracking logs
      - Skin-surface temperature data
      - Set the duration as three months/six months/one year/two year/three years
4. Shall set the following schedules:
   a. Recording schedule template
   b. Notification schedule template
   c. Access schedule template
      - Affect the applied access levels and access control application parameters after edited
      - Apply the changes to the device after edited
   d. Permission schedule template

e. Defense schedule template
f. Holiday settings

5. Add email template:
   a. Add up to 64 recipients
   b. Add domain user/email address as recipient
   c. Set email subject
   d. Set email content
   e. Attach image
   f. Configure the following email settings:
      - Server authentication
      - Cryptographic protocol
      - Sender email address
      - Sender name
      - SMTP server address
      - SMTP server port
      - User name
      - Password
6. Configure report settings
   a. Set the following report type:
      - Event
      - Alarm
      - Vehicle analysis
      - Overtime parking
      - People counting
      - Queue analysis
      - People density analysis
      - Heat analysis
      - Person feature analysis
      - Pathway analysis
      - Temperature analysis
      - Attendance
      - Resource logs
      - Device logs
   b. Set the report name
   c. Set the event report target
   d. Set report type
   e. Select email template
   f. Set format as excel or PDF
   g. Set the report language
7. Enable evidence collection:
   a. SFTP address
   b. Port
   c. User name
   d. Password
   e. Path
   f. Evidence type: add/delete/delete all
   g. Organization on site: add/delete/ delete all

h. Result/conclusion: Add/delete/delete all

8. Security settings
    a. Set Clients and SYS server transfer protocol as HTTP or HTTPS Advanced settings:
    b. Generate certificate between services in system and export certificate between system and Recording Server
9. Advanced settings
    a. Set camera ID as identifier number on the keyboard to display live view on smart wall
    b. Set health check frequency
        - Device health status
        - Server health status
        - Others
    c. Add rules for plate fuzzy search
    d. Hot spare
    e. Enable third-party integration and open platform
    f. Enable data interchange including database synchronization and access records dump
    g. Reset network information
    h. Set database password by admin user
    i. Set when to send a SUP upgrade prompt and who can receive the prompt
10. Before adding the Streaming Server or Cloud Storage Server to the system, you should export the service component certificate on this page and import it to the Streaming Server or Cloud Storage Server you want to add
11. Shall backup and restore system data:
    a. Shall set database backup of HikCentral Professional system, including configured data, configured pictures, received events, received alarms, face comparison data, card swiping records, attendance records, vehicle passing records, video analysis data, and server logs
    b. Shall set the frequency of backup as daily, weekly or monthly
    c. Shall set the backup date
    d. Shall set the backup time
    e. Shall check the saving path
    f. Shall set the max. number of backups
    g. Shall restore the configured data
12. Shall export configuration data of Remote Site, encoding device, and recording settings
13. Shall download HikCentral Professional Control Client on the Web Client
14. Admin user shall online/offline activate/deactivate license, online/offline update the license, and view license detailed information for system capabilities
15. For facial recognition camera/ANPR camera/thermal camera (report supported), you shall select the added cameras as these three types of cameras. Otherwise, these cameras' functions (facial recognition, plate recognition, and temperature report) cannot be performed normally in the system.

F. Log into the Control Client

1. Shall have the ability to enable auto-login, and login via domain name and password
2. Shall have the ability to automatically launch the client and login with the domain user
3. Shall have the ability to log in to the Control Client through HTTP or HTTPS
4. Shall have the ability to customize module arrangement on Control Panel

G. Resource Display Mode Configurable

1. Small-Scale Display Mode

2. Larger-Scale Display Mode

H. Map Management on Control Client and Mobile Client

1. Ability to show the related map of the alarm
2. Ability to show resource and view the details on the map
3. Ability to switch between the configured maps
4. Ability to filter resources on the map according to resource type
5. Ability to view live view of a single/multiple resource(s) on the map
6. Ability to search, then jump to the pointed place
7. Ability to add label to map
8. Ability to view history alarm
9. Ability to control status of the doors on the map
10. Cross-site map display and operation
11. Ability to operate the third-party integrated device on map
12. Ability to view the number of people in specified region in real-time on the map according to the resource group settings

I. Evidence Search on Control Client

1. Set the following search conditions:
   a. ID
   b. Keywords
   c. Evidence type
   d. Organization on site
   e. Result/conclusion
   f. Evidence status
   g. Uploading time
2. Check the search result:
   a. Name
   b. ID
   c. Type
   d. Organization on site
   e. Result
   f. Status
   g. Description
   h. Uploading time
3. Check and download the content of evidence

J. Health Monitoring on Control Client and Mobile Client (iOS)

1. Ability to provide near real-time information about the status of the SYS server and added resources (e.g. Recording Servers, Streaming Servers, connected cameras, encoding devices). It is critical to multiple aspects of operating the servers or devices and is especially important for maintenance. When a resource exception occurs, you can enter this module to check the resource status and find out the abnormal device(s) and view the exception details.
   Part of the following functions may not be supported by Mobile Client.
2. Overview: Provide status of the following devices and the ability to click on items for a detailed report if there is no network transmission device added in the platform:
   a. Set auto refresh or refresh manually
   b. Display health monitoring on smart wall (graphic card)
   c. Display health monitoring on auxiliary screen

d. Offline/total number of cameras
e. Number of camera with video loss
f. Number of camera with communication exception
g. Number of camera with recording exception
h. Number of camera with no recording schedule
i. Number of camera with arming exception
j. Abnormal/total number of access points
k. Offline/total number of UVSS(s)
l. Offline/total number of Remote Sites
m. HikCentral Professional Service status
    - Management server status
    - Memory status
    - CPU status
    - RAM status
    - Network status
    - Streaming gateway usage
    - Picture storage usage
n. Recording Server status
o. DeepinMind Server status
p. Security audit server status
q. Application Data Server status
r. Application Data Standby Server status
s. Number of streaming server with exception
t. Number of streaming server with notice
u. Number of normal streaming server
v. Total number of streaming server
w. Number of recording server with exception
x. Number of recording server with notice
y. Number of normal recording server
z. Total number of DeepinMind server
aa. Number of DeepinMind server with exception
bb. Number of DeepinMind server with notice
cc. Number of normal DeepinMind server
dd. Abnormal/total number of Encoding Devices
ee. Abnormal/total number of Access Control Devices
ff. Abnormal/total number of Video Intercom Devices
gg. Abnormal/total number of Elevator Control Devices
hh. Offline/total number of Decoding Devices
ii. Abnormal /total number of Security Control Devices
jj. Abnormal /total number of dock station

3. Overview (Topology): If there are network transmission devices managed in the system, the topology of devices will be displayed for network maintenance, which is a figure that displays the connection relation of network transmission devices, surveillance devices, etc.
    a. Display the hierarchical relationship of the devices, device information, link status and alarm information, etc.
    b. View device details, including basic information, device usage, device panel status and port information

c. View link details, including stream rate, connected device type and port information, etc.
d. If there is data transmission failure between the devices, you can view the connection path to judge which link is disconnected, to maintain the link efficiently
e. Export the real-time status overview page in PDF format, or export the exception data in Excel/CSV format

4. Camera of Central System: Provide the status of the followings:
   a. Name
   b. Address
   c. Area
   d. Connection number
   e. Network status
   f. Video signal
   g. Recording status
   h. Arming status
   i. Operation: Refresh to get the real-time status immediately of the camera; go to logical view of the camera
5. Camera of Remote Site: Provide the status of the followings:
   a. Name
   b. Address
   c. Area
   d. Network status
   e. Recording Status (in Central System)
   f. Arming status
   g. Operation: Refresh to get the real-time status immediately of the camera; go to logical view of the camera
6. Door: Provide the status of the followings:
   a. Name
   b. Access Control Device
   c. Area
   d. Access Control Device network status
   e. Face Recognition Terminal network status
   f. Door status
   g. Configured Door status
   h. Operation:
      - Refresh to immediately get the real-time status of the door
      - Control door status as: Unlock/Lock/Remain Unlocked/Remain Locked
7. Elevator: Provide the status of the followings:
   a. Name
   b. Elevator Control Device
   c. Area
   d. Elevator Control Device network status
   e. Card reader status
   f. Floor status
   g. Configured floor status
   h. Operation:
      - Refresh to immediately get the real-time status of the floor
      - Control floor status as: Temporary Access/Access with Credential/Free Access/Access Forbidden

8. UVSS: Provide the status of the followings:
    a. Name
    b. Address
    c. Area
    d. Network status
    e. Line Scan Camera status
    f. Capture Camera status
    g. Storage status
    h. Operation:
        - Refresh to immediately get the real-time status of the UVSS
        - Go to logical view of the unit
9. Remote Site: Provide the status of the followings:
    a. Name
    b. Version
    c. Address
    d. Network Status
    e. Default Stream
    f. Operation:
        - Refresh to immediately get the real-time status of the site
        - Switch the device accessing mode between automatically judge or proxy
    g. Restore All Network Connections
    h. Switch stream type between main stream, sub-stream, smoothing or default stream type
10. Recording Server: Provide the status of the followings
    a. Name
    b. Address
    c. Type
    d. Network status
    e. CPU usage
    f. RAM usage
    g. Hot Spare Property
    h. Recording status
    i. Hardware status
    j. HDD status
    k. HDD usage
    l. First added time (client time)
    m. Checking time (client time)
    n. Operation
        - Refresh to immediately get the real-time status of the Recording Server
11. DeepinMind Server: Provide the status of the followings
    a. Name
    b. Address
    c. Type
    d. Network status
    e. CPU usage
    f. RAM usage
    g. First added time (client time)
    h. Checking time (client time)

i. Operation:
    - Refresh to immediately get the real-time status of the server

12. Streaming Server: Provide the status of the followings
    a. Name
    b. Address
    c. Total streams
    d. Incoming streams
    e. Outgoing streams
    f. Network status
    g. CPU Usage
    h. RAM Usage
    i. First added time (client time)
    j. Checking time (client time)
    k. Operation:
        - Refresh to immediately get the real-time status of the Streaming Server
13. Security audit server: Provide the status of the followings
    a. Name
    b. Address
    c. HDD status
    d. Network status
    e. CPU Usage
    f. RAM Usage
    g. First added time (client time)
    h. Checking time (client time)
14. Encoding Device: Provide the status of the followings
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. HDD status
    g. HDD usage
    h. Recording status(Local Device)
    i. Default Stream
    j. Access Protocol
    k. Hot spare property
    l. Arming status
    m. RAID
    n. First added time (client time)
    o. Checking time (client time)
    p. Operation
        - Refresh to immediately get the real-time status of the device
        - Go to Logical View of the camera
    q. Switch Device Access Mode in batch:
        - Restore Default: Restore the way the configuration end is set up to access the device

- Automatically Judge: Determine the way to access the device according to the current network
- Directly Access: The client directly accesses the device
- Proxy: The client accesses the device through Steaming gateway and the Management service

r. Switch stream type of Encoding Devices in batch:
- Main stream
- Sub-stream
- Smoothing
- Default stream type

15. Access Control Device: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. Master/Slave lane controller network status
    g. Component status
    h. Battery status
    i. Arming status
    j. First added time (client time)
    k. Checking time (client time)
    l. Operation: Refresh to immediately get the real-time status of the Device; go to physical view of the device
16. Video Intercom Device: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. Calling center status
    g. Arming status
    h. First added time (client time)
    i. Checking time (client time)
    j. Operation: Refresh to immediately get the real-time status of the Device; go to physical view of the device
17. Elevator Control Device: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. Battery status
    g. Arming status
    h. Distributed elevator controller status
    i. First added time (client time)
    j. Checking time (client time)

k. Operation: Refresh to immediately get the real-time status of the Device; go to physical view of the device

18. Security Control Device: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. Battery status
    g. Arming status
    h. First added time (client time)
    i. Checking time (client time)
    j. Operation: Refresh to immediately get the real-time status of the Access Control Device
19. Dock Station: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. HDD status
    g. HDD usage
    h. First added time (client time)
    i. Checking time (client time)
    j. Operation: Refresh to immediately get the real-time status of the decoding device
20. Decoding Devices: Provide the status of the followings:
    a. Name
    b. Address
    c. Device Serial No.
    d. Version
    e. Network status
    f. Manufacturer
    g. First added time (client time)
    h. Checking time (client time)
    i. Operation: Refresh to immediately get the real-time status of the decoding device
21. Display host server and spare server when hot spare function is enabled

K. Tools on Control Client

1. Quick icon to download or open standalone VSPlayer
2. Broadcast: Ability to do a general audio announcement to all audio-enabled network cameras and end devices
3. Alarm Output Control: Ability to turn on/off the alarm outputs of the connected camera
4. Two-Way Audio: Ability to select camera with audio in/out and receive and send audio communications between the Control Client and the camera
5. Arming Control: Ability to arm or disarm the configured alarms of the resources; ability to arm or disarm partitions, bypass zones, clear alarms, arm or disarm radars

L. Download Center on Control Client: Ability to view status of all video files being exported

1. Start (all)

2. Stop (all)
3. Delete all
4. Download (VS) Player
5. Set download time as 00:00-06:00, 06:00-12:00, 12:00-18:00, 18:00-24:00, or custom time settings
6. Arrange an off-peak time period to automatically download

M. Local Picture Management on Control Client

1. Ability to easily browse snapshots that have been stored in accessible Windows file folders
2. Ability to save, print, or delete the captured pictures

N. Local Recording Management on Control Client

3. Ability to easily browse video clips that have been stored in accessible Windows file folders
4. Ability to save or delete the video clips

O. Basic Settings on Control Client

1. General settings: support the following settings:
   a. Shall set global stream as main stream, sub-stream or smooth stream
   b. Shall set threshold for main/sub-stream as 1/2, 1/4, 1/9, 1/16, 1/25, 1/36, 1/64
   c. Shall set the default waiting time for the Control Client as default value, default valuex1.5, or default valuex2
   d. Shall set picture format as JPEG or BMP
   e. Shall set the maximum mode as Full Screen or Maximize
   f. Set time zone as client time or device time
   g. Enable time difference
   h. Set bandwidth to affect downloading from pStor
   i. Shall enable Auto-login
   j. Shall resume last interface: Control panel, last interface, or specific view
   k. Shall enable display window No.
2. Image Settings
   a. Shall set the view scale in live view or playback as Full Screen or Original Resolution
   b. Shall set the window scale as 4:3 or 16:9
   c. Shall set video caching as small(1 frame), medium(6 frames) or large(15 frames)
   d. Shall decode continuously when switching between one window and multiple windows after enabling continuous decoding
   e. Shall set video caching parameters based on network performance, computer performance, and bit rate. Larger frame caching will result in better video performance
   f. Shall support GPU decoding
   g. Shall display overlay transaction information to view ATM transaction information in live view and playback
   h. Shall display overlay transaction information on the live view and playback
   i. Shall display overlay temperature information on the live view and playback
   j. Shall display the VCA rule in the live view and playback
3. Shall edit saving path of manual recorded video footage, captured pictures, and installation packages, and users will receive a reminder to download the latest version if the Control Client differs with the accessed SYS in version
4. Support the operation of network keyboard and joystick to live view and playback
5. Support configuring screen position according to the actual position
6. Support customizing the icons on the live view and playback toolbar
7. Support configuring alarm sound to enable voice engine or local audio files

8. Support setting interval of auto-refreshing resource status as 30s, 1 min, 3 min, 5 min, 10 min, 15 min, and restore the interval as 3 min

P. Audit Trial on Control Client: Search and view logs for the following

1. Server Logs
   a. Error Log
   b. Warning Log
   c. Information Log
2. Device Logs
   a. Online/offline logs
   b. Logs on device
3. Resource Logs
   a. Online/offline logs
   b. Recording status
4. Log searches are based on operation, user, and time interval searches of:
   a. Today
   b. Yesterday
   c. Current week
   d. Last 7 days
   e. Last 30 days
   f. Custom time interval

Q. Log into Mobile Client

1. Ability to change the password on the first time login
2. Ability to remember password
3. Ability to show the security level of the password
4. Ability to log in to the system via Active Directory
5. Ability to log in to the system via domain name
6. Ability to log in to the system automatically
7. Ability to support HTTPS/HTTP

R. Settings on Mobile Client

1. Ability to check the current account information
   a. User name
   b. Login mode
   c. Server information
   d. Server address
   e. Server version
2. Ability to rename server alias
3. Ability to view the account list
4. Ability to logout
5. Ability to upload person information
6. Ability to switch between the following accessing device modes when performing live view or playback:
   a. Restore default
   b. Automatically judge
   c. Directly access
   d. Proxy
7. Ability to enable GPU decoding
8. Ability to show network traffic data used in the following environments:

a. Mobile Network
b. Wi-Fi

9. Ability to mark logical areas with sub-areas

S. Favorites Management on Mobile Client

1. Ability to manage frequently checked resources in favorites
2. Ability to display resources by resource types (camera, door or UVSS) or displaying all the resources in the Favorites
3. Display the mixed list of camera, door and UVSS or list of some specific resources

3.2 Video Surveillance

A. Manage Encoding Devices on Web Client

1. Add encoding devices to the system by Hikvision Private Protocol via the following discovery options:
   a. IP/Domain
   b. Hik-Connect
   c. IP Segment
   d. Port Segment
   e. Batch Import
2. Add encoding devices to the system by Hikvision ISUP Protocol via the following discovery options:
   a. Device ID
   b. Device ID Segment
   c. Batch Import
3. Add encoding devices to the system by ONVIF Protocol via the following discovery options:
   a. IP/Domain
   b. IP Segment
   c. Port Segment
   d. Batch Import
4. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP), by Hikvision Private Protocol, Hikvision ISUP Protocol, or ONVIF Protocol
5. Verify stream encryption key
6. Set mapped port if any
7. Add camera to area
8. Apply time zone settings to the device
9. Select Streaming Server for the area
10. Select video storage location for the camera
11. Get device's local recording settings
12. Refresh the status of the added devices
13. Set remote configuration of the added devices
14. Change password of the added devices (in batch)
15. Edit bandwidth for video downloading
16. Activate the online devices (in batch)
17. Set N+1 hot spare for device
18. When adding devices, shall have the option to automatically create logical areas by device name or add to an existing area
19. Synchronize NVR channel names with the names displayed on the Web Client

B. Manage Recording Server on Web Client

1. Add pStor, Network Video Recorder (only for picture storage), Cloud Storage Server, Hybrid SAN, and pStor Cluster Service as Recording Server
2. Import service component certificate to pStor and Cloud Storage Server
3. View storage information for the Recording Server, including used space and free space
4. Enable picture storage function of pStor, Hybrid Storage Area Network and Cloud Storage Server
5. Custom video copy-back to copy back recorded videos from Hybrid SAN's managed device automatically and set start time and end time
6. Set video expiration duration for Hybrid SAN
7. View channel information configured to store video in Recording Server
8. View connected device information of pStor Cluster Service:
9. When adding Hybrid SANs, shall be able to set as host recording server for network camera or as an N+1 hot spare for Hybrid SANs recording redundancy
10. Enable WAN access for the Recording Server

C. Manage Streaming Server on Web Client

1. Add Streaming Server via IP address (in LAN or WAN),
2. Import service component certificate to Streaming Server

D. Logical View: Area Management on Web Client

1. Group cameras into different areas
2. Synchronize camera name, moving the camera to other area, and displaying cameras in sub-areas, remote configuration on device, copying the current camera's specified configuration parameters to other cameras for batch configuration
3. Shall have the ability to edit the following basic information of cameras for current and Remote Site:
    a. Camera name
    b. Protocol type
    c. Check the live view and instant playback of the camera in the same screen
    d. Configure recording for the camera
    e. Configure the camera remotely
4. Shall have the ability to set visual tracking by associating the camera with other cameras nearby and create on-video overlays.
5. Shall have the ability to configure camera recording settings for current and Remote Site:
    a. Set main storage and auxiliary storage for cameras
    b. Synchronize recording settings to device
    c. Get recording settings from device
    d. Select storage location as Encoding Device, Hybrid Storage Area Network, pStor, Cloud Storage Server, and pStor Cluster Service for cameras of current site
    e. Select storage location as pStor, Hybrid Storage Area Network or Cloud Storage Server of central system for cameras of Remote Site
    f. Set recording schedule template
    g. Select stream type as main stream or sub-stream
    h. Set pre-record and post-record for recording the video
    i. Select the storage mode for the recorded videos of cameras of current site: overwrite the oldest videos when disk or allocated quota is full, and automatically delete the oldest videos after the specified retention period

j. The Recording Server can get videos from the camera directly, avoiding the risk that if the NVR camera connected is offline, the recording server can not get video from the offline NVR
k. Select a Streaming Server to get the video stream of the camera
l. Enable the ANR function to turn Automatic Network Replenishment on to temporarily store the video in the camera when the network fails and transport the video to storage devices when the network recovers if the video files are stored in an Encoding Device or Hybrid Storage Area Network
m. Add new Recording Server

6. Shall have the ability to set picture storage settings for cameras
   a. Set storage location as system management server
   b. Set storage location as Hybrid SAN
   c. Set storage location as Cloud Storage Server
   d. Set storage location as a pStor
   e. Set storage location as an NVR
7. Copy configuration information of stream type, protocol type, main storage, and auxiliary storage to other channels

E. Local Configuration, Live View, and Playback on Web Client:

1. Network transmission:
   a. GPU hardware decoding:
      - Enable
      - Disable
   b. Global stream:
      - Main stream
      - Sub stream
      - Smooth stream
   c. Threshold for main/sub-stream:
      - 1/4
      - 1/9
      - 1/16
      - 1/64
   d. Network timeout:
      - Default
      - Default x 1.5
      - Default x 2
   e. Video caching:
      - Small (1 frame)
      - Medium (6 frames)
      - Large (15 frames)
   f. Time zone:
      - Client time
      - Device time
   g. Picture format:
      - BMP
      - JPEG
   h. Device access mode:
      - Restore default

- Automatically judge
- Directly access
- Proxy

2. Shall view the saving path of video files and captured pictures on the current PC
3. Shall live view up to 64 cameras simultaneously
4. Shall view image thumbnail
5. Shall playback up to 16 cameras simultaneously
6. Shall support capturing, manual recording, digital zoom, two-way audio, select stream type, displaying camera status of resolution and frame rate, audio on/off, switching to instant playback during live view
7. Shall support capturing, clipping, digital zoom, displaying camera status, switching between main stream, sub stream and smooth stream, audio on and off, selecting from main storage and auxiliary storage
8. Shall support selecting playback date from the calendar

F. Live View on Control Client

1. Ability to view up to 256 cameras
2. Ability to display GIS map/related map after the camera is added on the map
3. Ability to display the configured resource groups on the map and view the details, such as number of person in the group, triggered alarm details, etc.
4. Ability to display thumbnail of camera
5. Ability to auto switch to sub stream of network camera according to the configuration of stream threshold
   a. Enable auto-switching between main stream and sub stream
   b. Enable to set the main stream threshold as 1/2, 1/4, 1/9, 1/16, 1/25,1/36, 1/64
   c. Enable to switch the live view stream to main stream, sub stream or smooth stream, the smooth stream will show if the device supports smoothing function, you can switch to smooth stream if in low bandwidth situation to make live view more fluent
6. Shall support up to 4 auxiliary screens during live view and 1 screen for playback
7. The following functions are available on the tile toolbar for easy access to operator:
   a. Audio control
   b. Capture: ability to save snapshots
   c. Print camera image
   d. Enable manual recording of displayed Network Camera
   e. Enable and utilize two-way audio
   f. Enable view instant playback
   g. Digital zoom
   h. 3D positioning for PTZ camera
   i. Activate on-screen PTZ controls
   j. Show camera status
      - Frame rate
      - Resolution
      - Stream format
      - Bit rate
      - Connection number
      - Network status
      - Signal status
      - Recording status

- Access mode
- Channel type
- Device name
- IP address
- Access protocol
- Area name
- Main storage/auxiliary storage
- Storage location
- Storage type
- Recording schedule template
- Video stream
- Streaming server
- Pre-record: enabled/disabled
- Post-record: duration
- ANR: enabled/disabled
- Picture storage location

k. Arming control
l. Switch stream type of camera
m. Edit transcoded stream
n. Live view on smart wall by graphic card
o. VCA playback
p. Alarm output
q. Create zooming areas and dewarped zooming areas on the video image to view detailed live view
r. Save area as view
s. Area auto-switch
t. Add tag
   - Set time range
   - Add description
   - Select storage type
u. Visual tracking
v. Manual smart linkage to Locate or track the target appeared in the view of bullet or box camera with a linked speed dome
w. People density monitoring to view people density data and real- time statistics of people amount.
x. Search for the target person by the captured pictures
y. Support the following fisheye expansion functions:
   - Zoom to expand the video by the wheel
   - Flexible PTZ operation
   - Multiple cameras of fisheye expansion
   - Save fisheye expansion as view

8. Ability to customize camera tile toolbar
   a. Re-order icons to user preference
   b. Remove icons of functions not required for user
9. Ability to create tile patterns with selected cameras and save as a view
   a. Save as private view, only accessible to the user profile creating the view
   b. Save as public view, accessible to all users

c. Play in batch: play all cameras belonging to one area on different screens
d. View group auto-switch
e. Auto-switch: loop all cameras belonging to one area on one screen or play in batch:
   (a) Automatically change cameras every 5s, 10s, 15s, 20s, 30s, 40s, 1min, 3min, and 5min
      - Pause/Start guard tour
      - Manually switch to next/previous camera live view
   (b) Display cameras added to one map in one screen or play in batch. Automatically change cameras every 5s, 10s, 15s, 20s, 30s, 40s, 1min, 3min, and 5min
   (c) Display on smart wall of graphic card

10. PTZ Control: Shall have following options to control PTZ cameras
    a. On-screen PTZ icon
       - Able to control all PTZ functions available directly on camera
    b. On tile "point and go" directional control
       - Able to use mouse wheel for zoom in after PTZ control is enabled
    c. 3D Positioning: ability to draw box for region of interest to zoom in on tile
11. Live view of Remote Site's cameras
12. After reopening the client, display the view before closing the client
13. Set preset and patrol for common cameras
14. Set preset and patrol settings of fisheye camera
15. View detected events in live view
    a. View/filter/clear the detected events, including face comparison event and access event
    b. View access event details
    c. Quick-jump to Access Record module
    d. Add the person to person list
    e. Add recognized vehicle to vehicle list
    f. Subscribe events
       - For face comparison events, shall subscribe events of all the resources
       - For access events, shall subscribe according to event types: all events, normal card swiping events, abnormal card swiping events, device exceptions, alarm input events, and other events
16. Diagnose when live view failed
    a. Display the details of the camera
    b. Display the exception description
    c. Display the diagnosis details, including requesting URL status, logging into encoding device status, getting stream from encoding device status
    d. Quick link to event log, server log, device log, health monitoring
    e. Mark the diagnosis

G. Playback on Control Client

1. Ability to play back 1 to 16 cameras simultaneously
2. Ability to display GIS map/related map
3. When playing multiple cameras simultaneously, have ability to view in non-synchronized and synchronized mode
4. Ability to hover on the timeline to show the time
5. Ability to fast-forward by 1x, 2x, 4x, 8x, 16x, and slow-forward by 1/16x, 1/8x, 1/4x, 1/2x
6. Ability to export one or multiple cameras displayed simultaneously:
   a. Set export location

b. Set whether to download VSPlayer for viewing
c. Export video files in MP4/AVI/EXE format
d. Set saving path
e. Search and export video files of over 48 hours duration
f. Synchronize downloading time

7. The following functions are available on the camera playback tile toolbar for easy access to operator:
   a. Capture: ability to save JPEG snapshots and search video by the captured picture
   b. Print camera image
   c. Clipping: ability to quickly export video clips
   d. Add tag to video
   e. Digital zoom
   f. Lock video: to prevent video segments from being over written by schedule
   g. Camera status
      - Frame rate
      - Resolution
      - Stream format
      - Bitrate
      - Connection number
      - Network status
      - Signal status
      - Recording status
      - Access Mode
      - Channel type
      - Encoding device/site name
      - IP address
      - Access protocol
      - Area name
      - Main storage/auxiliary storage
      - Storage location
      - Storage type
      - Recording schedule template
      - Video stream type
      - Streaming server
      - Pre-record: enable/disable
      - Post-record duration
      - ANR status
      - Picture storage settings
   h. Stream type switch
   i. Extract frames from the video and play the extracted images (frames) one by one
   j. Playback on smart wall
   k. Transcoding playback
   l. Audio on/off
   m. Video download
   n. VCA search
   o. Fisheye dewarping
   p. Visual tracking

q. Create zooming areas and dewardped zooming areas on the video image to view detailed playback
r. Search for the target person by the captured pictures

8. Customize camera tile tool bar
    a. Re-order icons to user preference
    b. Remove icons of functions not required for user
9. Support display video on the smart wall
10. Playback channels of Remote Sites
11. Search video files by time
12. Display the date with video files marked with a triangle
13. Support ATM-DVR, its playback type shall be set as command playback
14. Select storage location of recorded video files (central storage or remote storage)
15. Enable/disable thumbnails
16. Zoom in or zoom out on the timeline
17. Support dual-stream playback
18. Support video downloading
    a. Support AVI format for video file download
    b. Encrypt to download in MP4/EXE format, and click and play directly after downloading with player in MP4 format
    c. Support save the downloading file as evidence
    d. Support privacy mask after downloaded and played with VSPlayer
    e. Adjust downloading time
    f. Check the merged video files in one folder
19. Diagnose when playback failed
    a. Display device information
    b. Display exception description
    c. Quick link of server log
    d. Mark the diagnosis

H. Live View on Mobile Client

1. Ability to add/delete cameras for multiple view, and view up to 8 cameras simultaneously
2. Ability to set 1/4/9 window division for tablet
3. Ability to switch to saved view pattern
4. Ability to view real-time video from stream encryption device
5. Ability to view real-time video from the Under Vehicle Surveillance System’s related camera (only for tablet)
6. Ability to play the live videos or video footage of multiple resources simultaneously
7. Ability to view the live video of the door's related camera.
8. Ability to control the status of doors (including turnstiles) and view the card swiping record in real time when viewing the live video of the door's related cameras. If the door is a turnstile, select entrance control or exit control
9. Ability to view the live video of the elevator 's related camera
10. Ability to control the status for each floor (temporary access, access with credential, free access, or access forbidden) linked to the elevator control device
11. Ability to view real-time video from the door station’s related camera(s)
12. Ability to receive card-swiping events when viewing real-time video from the door station’s related camera(s)
13. Ability to view the live video of the radar's related camera.
14. Ability to arm/disarm the radar during the live view of the radar's related camera.

15. Ability to display persons' real-time access records, including person profile, person name, and access results
16. Ability to view the recognized passing vehicle information, including license plate number and passing time
17. Ability to view the detected passing vehicle information, including real-time undercarriage picture, configured original undercarriage picture, vehicle picture, license plate number, and passing time (only for tablet)
18. Ability to mark on the captured real-time undercarriage picture (only for tablet)
19. Ability to add new vehicle to the vehicle list
20. Ability to view the person's face comparison information (real-time and history), including captured face picture, person details, captured time, and similarity
21. Ability to add mismatched person into person list
22. Ability to trigger user-defined event manually
23. Ability to subscribe all access and face comparison events(only for tablet)
24. Ability to switch cameras if the access control point links two cameras
25. Has the following functions available on tile toolbar for easy access:
    a. Upload the generic event during live view
    b. Toggle the settings between 1, 4, 9 tiles (only for tablet)
    c. Stop/recover all the live views
    d. Capture: ability to save snapshots, and share the captured pictures via email
    e. Preview the captured picture and recorded video footage
    f. Enable manual recording of displayed cameras, and share the manual recording files via email
    g. Switch on/off audio
    h. Enable and utilize two-way audio
    i. Digital zoom
    j. Switch between sub-stream and main stream
    k. Add the camera/view to Favorites/View
    l. PTZ control
        - Start/stop the auto-scan
        - Zoom +/-
        - Focus +/-
        - Iris +/-
        - Manage presets
        - 3D positioning
    m. Fisheye dewarping
    n. Ability to live view in full-screen mode

I. Playback on Mobile Client

1. Ability to playback 1 to 4 cameras simultaneously for tablet
2. Ability to playback up to 1 camera simultaneously for phone
3. Ability to playback video from stream encryption device
4. Ability to stop playback of all cameras in one step or one by one
5. Ability to choose date and storage location for playback
6. Ability to search cameras for playback by name or choose cameras added to Favorites
7. Ability to restore the playback interface when the user logs out
8. Ability to switch the window for playback
9. Ability to search Logical Area/Access point/Camera via key words

10. Ability to support synchronous playback
11. Ability to playback the cameras of Remote Sites
12. Ability to support VCA search (only for tablet)
13. Ability to add person into Person List (only for tablet)
14. Ability to search access records: search the persons' access records and view the access details including person details and access point information (only for tablet)
15. Ability to add/delete/edit tags and search video via tags (only for tablet)
16. Ability to playback single camera in full-screen mode
17. Has the following functions available on camera playback tile toolbar for easy access:
    a. Capture: ability to save snapshots
    b. Clipping: ability to quickly create and export video clip
    c. Pause the playback
    d. Digital Zoom
    e. Add tag during Playback
    f. Switch the playback speed to 1/4X, 1/2X, 1X, 2X and 4X
    g. Stop/resume the playback
    h. Switch on/off audio
    i. Fisheye dewarping
    j. Locate the timeline of playback manually
18. Fisheye dewarping
19. Activate on-screen PTZ controls

J. Video Search on Control Client and Mobile Client

1. Ability to search for specific types of indexed video:
    a. Tag: Video that has been auto tagged or manually tagged at a certain timestamp
    b. Lock: Search only video that has been "locked" to not be overwritten by schedule
    c. Segment: Ability to search for up to 7 days of video averagely divided into segments from 1 to 100
    d. Interval: Ability to search for up to 7 days of video divided by intervals from 1 to 60 minutes or seconds
    e. Transaction Event
        - Ability to search for up to 7 days of transaction items by keywords when NVR/DVR is integrated with a Point of Sales (POS) system
        - Enable/disable case sensitive for key word searching
    f. Search ATM event triggered video footage by the card number that is contained in the ATM information
    g. Search Video/Picture/Audio Stored on Dock Station
        - Select dock station
        - Filter time settings
        - Check the video, person name, capture picture
        - Export file (in batch) to local PC in the format of MP4 and AVI
        - Encrypt the video files in MP4 format
        - Save the video files and create as new evidence
            - Create new evidence ID
            - Create new evidence name
            - Select evidence type
            - Select organization on site
            - Set the result/conclusion

        - Set evidence status
    - Save the video files and add to existing evidence
    - Lock file
  h. Supports thumbnails
  i. Ability to search main stream in all main storage
  j. Ability to search sub-stream in all main storage
  k. Ability to search main stream in all auxiliary storage
  l. Ability to search sub-stream in all auxiliary storage
  m. Ability to search the video files from Central System or Remote site
2. VCA Search
  a. Support Motion Detection
  b. Support Line Crossing Detection
  c. Support Intrusion Detection
  d. Support reverse playback
  e. Support downloading the searched video clips
  f. Support displaying the video clips in the list or thumbnail mode
  g. Support playing searched video clips in order
  h. Support viewing large picture and the related video
  i. Support downloading the current picture and video in the format of MP4, AVI and EXE

3.3 Event and Alarm

A. System-Monitored Events Configuration on Web Client

1. Shall batch add the following events from cameras:
  a. VCA Event
    - Defocus Detection
    - Distance Measurement
    - Fast Moving (Detection)
    - Intrusion (Detection)
    - Intrusion (Radar PTZ Camera)
    - Line Crossing (Detection)
    - Line Crossing (Radar PTZ Camera)
    - Loitering (Detection)
    - Motion Detection
    - Object Removal (Detection)
    - Parking (Detection)
    - People Gathering (Detection)
    - Region Entrance (Detection)
    - Region Exiting (Detection)
    - Reserve Entering Alarm
    - Scene Change Detection
    - Unattended Baggage (Detection)
    - Video Tampering Detection
  b. People Related Event
    - Abnormal Face
    - Absence Detection
    - Climbing Detection
    - Face Capture

- Face Detection
- Falling Down
- Frequently Appeared Person
- Getting Up Detection
- Hard Hat Detection
- Key Person Getting Up Detection
- Multi-Target-Type Detection
- Multiple Faces
- No Mask
- Number of People Exception
- People Density
- People Density Analysis
- People Entrance (Non Police)
- People Queuing-Up Alarm
- Physical Conflict
- Physical Conflict (Indoor)
- Playground Overstay Detection
- Playing Mobile Phone
- Police Absence
- Probable Physical Conflict (Indoor)
- Sitting Detection
- Sleep on Duty Detection
- Standing Up Detection
- Staying Overtime
- Sticking Scrip
- Tailing
- Waiting Time Detection Alarm
- Wearing Sunglasses

c. Vehicle Related Event
   - Driving on the Lane Line
   - Illegal Lane Change
   - Illegal Parking
   - Illegal U-Turn
   - Motor Vehicle on Non-Motor Vehicle Lane
   - Vehicle Blocklist Alarm
   - Vehicle Overspeed
   - Vehicle Allowlist Alarm
   - Wrong-Way Driving

d. Thermal Related Event
   - Abnormal Temperature
   - Fire Source Detection
   - PIR
   - Temperature Difference Alarm
   - Temperature Pre-Alarm

e. Other Video Event
   - Audio Exception Detection

- Installing Scanner
- Sudden Change of Sound Intensity Detection
- Sudden Decrease of Sound Intensity Detection
- Sudden Increase of Sound Intensity Detection

f. Maintenance Event
- Camera Communication Exception
- Camera Communication Recovered
- Camera Offline
- Camera Online
- Camera Recording Exception
- Camera Recording Recovered
- Channel Armed
- Channel Arming Failed
- Operation Timeout
- Video Loss

2. Shall batch add the following Door Events
   a. Normal Card Swiping
      - Access Granted by Card
      - Access Granted by Card and Fingerprint
      - Access Granted by Card and PIN
      - Access Granted by Card, Fingerprint, and PIN
      - Access Granted by Employee ID and Fingerprint
      - Access Granted by Employee ID and PIN
      - Access Granted by Employee ID, Fingerprint, and PIN
      - Access Granted by Employee ID and Face
      - Access Granted by Face
      - Access Granted by Face and Card
      - Access Granted by Face and Fingerprint
      - Access Granted by Face and PIN
      - Access Granted by Face, Card, and Fingerprint
      - Access Granted by Face, PIN, and Fingerprint
      - Access Granted by Fingerprint
      - Access Granted by Fingerprint and PIN
      - Combined Authentication Passed
      - Duress Alarm
   b. Abnormal Card Swiping
      - Access Denied (Door Remained Locked or Inactive)
      - Access Denied (First Card Not Authorized)
      - Access Denied (NFC Card Reading Disabled)
      - Access Denied by Card and Fingerprint
      - Access Denied by Card and PIN
      - Access Denied by Card, Fingerprint, and PIN
      - Access Denied by Employee ID and Fingerprint
      - Access Denied by Employee ID and PIN
      - Access Denied by Employee ID, Fingerprint, and PIN
      - Access Denied by Employee ID and Face

- Access Denied by Encrypted CPU Card
- Access Denied by Face
- Access Denied by Face and Card
- Access Denied by Face and Fingerprint
- Access Denied by Face and PIN
- Access Denied by Face, Card, and Fingerprint
- Access Denied by Face, PIN, and Fingerprint
- Access Denied by Fingerprint
- Access Denied by Fingerprint and PIN
- Access Denied by Invalid M1 Card
- Access Timed Out by Card and Fingerprint
- Access Timed Out by Card and PIN
- Access Timed Out by Card, Fingerprint, and PIN
- Access Timed Out by Employee ID and Fingerprint
- Access Timed Out by Employee ID and PIN
- Access Timed Out by Employee ID, Fingerprint, and PIN
- Access Timed Out by Employee ID and Face
- Access Timed Out by Face and Card
- Access Timed Out by Face and Fingerprint
- Access Timed Out by Face and PIN
- Access Timed Out by Face, Card, and Fingerprint
- Access Timed Out by Face, PIN, and Fingerprint
- Access Timed Out by Fingerprint and PIN
- Anti-Passback Server Respond Failed
- Anti-Passback Violation
- Authentication Mode Mismatched
- Card Not in Multi-Factor Authentication Duration
- Card Not in Multi-Factor Authentication Group
- Card Number Expired
- Combined Authentication Timed Out
- CPU Card Reading Disabled
- EM Card Reading Disabled
- Employee ID Not Exist
- Face Recognition Failed
- Failed PIN Attempts
- Fingerprint Not Found
- Invalid Card Swiping
- Invalid Time Period
- Live Face Detection Failed
- M1 Card Reading Disabled
- Max. Card Access Failed Attempts
- Multi-Door Interlocking
- No Access Level Assigned
- No Card Number Found
- Verifying Card Encryption Information Failed

c. Other Door Event

- Abnormal Temperature
- Access Failed When Free Passing
- Barrier Obstructed
- Barrier Obstruction Recovered
- Blocklist Event
- Card Reader Tamper Alarm
- Climbing Over Barrier
- Door Abnormally Open (Door Contact)
- Door Bell Rang
- Door Button Pressed Down
- Door Button Released
- Door Closed (Door Contact)
- Door Locked (Door Lock)
- Door Locked by Keyfob
- Door Not Closed
- Door Not Open
- Door Open (Door Contact)
- Door Open Timed Out (Door Contact)
- Door Open with First Card Ended
- Door Open with First Card Started
- Door Remained Unlocked by Keyfob
- Door Unlocked (Door Lock)
- Door Unlocked by Keyfob
- Face Recognition Terminal Offline
- Face Recognition Terminal Online
- First Card Authorization Ended
- First Card Authorization Started
- Force Accessing
- Intrusion
- Multi-Factor Authentication Timed Out
- Multi-Factor Authentication: Access Denied by Remote Client
- Multi-Factor Authentication: Access Denied by Super Password
- Multi-Factor Authentication: Access Granted
- Multi-Factor Authentication: Remotely Open Door
- Multi-Factor Authentication: Repeated Authentication
- Multi-Factor Authentication: Super Password Access Granted
- Passing Timeout
- Remaining Locked Status Ended
- Remaining Locked Status Started
- Remaining Unlocked Status Ended
- Remaining Unlocked Status Started
- Remote: Locked Door
- Remote: Remained Locked (Credential Failed)
- Remote: Remained Unlocked (Free Access)
- Remote: Unlocked Door
- Reverse Passing

- Secure Door Control Unit Tamper Alarm
- Tailgating

3. Shall batch add Elevator events
   a. Normal Card Swiping
      - Access Granted by Card
      - Access Granted by Card and Fingerprint
      - Access Granted by Card and PIN
      - Access Granted by Card, Fingerprint, and PIN
      - Access Granted by Fingerprint
      - Access Granted by Fingerprint and PIN
      - Duress Alarm
      - Enter Dismiss Code
      - Skin-Surface Temperature Measured
   b. Abnormal Card Swiping
      - Access Denied (NFC Card Reading Disabled)
      - Access Denied by Card and PIN
      - Access Denied by Card, Fingerprint, and PIN
      - Access Denied by Encrypted CPU Card
      - Access Denied by Fingerprint
      - Access Denied by Fingerprint and PIN
      - Access Denied by Invalid M1 Card
      - Access Denied in Sleep Mode
      - Access Timed Out by Card and PIN
      - Access Timed Out by Card, Fingerprint, and PIN
      - Access Timed Out by Fingerprint and PIN
      - Anti-Passback Server Respond Failed
      - Authentication Mode Mismatched
      - Card Number Expired
      - CPU Card Reading Disabled
      - EM Card Reading Disabled
      - Invalid Time Period
      - Live Face Detection Failed
      - M1 Card Reading Disabled
      - Max. Card Access Failed Attempts
      - No Access Level Assigned
      - No Card Number Found
      - Verifying Card Encryption Information Failed
   c. Other Door Event
      - Auto Button Relay Connected
      - Auto Button Relay Disconnected
      - Button Relay Connected
      - Button Relay Disconnected
      - Card Reader Tamper Alarm
      - Door Open with First Card Ended
      - Door Open with First Card Started
      - Remaining Locked Status Ended

- Remaining Locked Status Started
- Remaining Unlocked Status Ended
- Remaining Unlocked Status Started
- Remote: Locked Door
- Remote: Remained Locked (Credential Failed)
- Remote: Remained Unlocked (Free Access)
- Remote: Unlocked Door

4. Shall batch add Radar events
    - Auto-Arming
    - Auto-Arming Failed
    - Auto-Disarming
    - Auto-Disarming Failed
    - Disarming
    - Instant Arming
    - Line Crossing
    - Region Entrance
5. Shall batch add Alarm Input events
6. Shall batch add the following Vehicle Features events
    - License Plate Matched Event
    - License Plate Mismatched Event
    - Vehicle Type Matched Event
7. Shall batch add the following Person events
    - Face Matched Event
    - Face Mismatched Event
    - Rarely Appeared Person Event
    - Person Matched Event
    - Card Number Matched Event
    - Abnormal Temperature
    - No Mask
8. Shall batch add the following Under Vehicle Surveillance System events
    - Offline
    - Online
9. Shall batch add the following Parking Lot events
    - Calling Center
    - Frequently Appeared Vehicle
    - Overstayed Event
    - Park in Forbidden Period
    - Vehicle Matched Event
    - Vehicle Mismatched Event
10. Shall batch add Remote Site events: Site Offline
11. Shall batch add health monitoring events from Encoding Device:
    - Array Exception
    - Camera/Recording Resolution Mismatch
    - Device Armed
    - Device Arming Failed
    - Device Offline

- Device Reconnected
- Encoding Device Recording Exception
- Encoding Device Recording Recovered
- HDD Bard Sector
- HDD Full
- HDD High Temperature
- HDD Impact Detection
- HDD Severe Failure
- Illegal Login
- R/W HDD Failure
- Video Standard Mismatch

12. Shall batch add health monitoring events from Access Control Device:
    - Active Infrared Intrusion Detector Exception
    - AC Power Off
    - AC Power On
    - Battery Voltage Recovered
    - Calling Surveillance Center
    - CAN BUS Exception
    - Communicated with IR Adapter Exception
    - Communicated with Light Board Failed
    - Connection Recovered with Anti-Passback Server
    - Device Armed
    - Device Arming Failed
    - Device Offline
    - Device Online
    - Device Power Off
    - Device Power On
    - Device Tampered
    - Device Tamper Restored
    - Disconnected with Anti-Passback Server
    - Edit Central Group Configuration
    - Edit GPRS Parameters
    - Edit Network Center Configuration
    - Export Card Permission Parameters
    - Export Normal Configuration File
    - Flash Writing/Reading Exception
    - ID Card Reader Connected
    - ID Card Reader Disconnected
    - Import Card Permission Parameters
    - Import Normal Configuration File
    - Indicator Turned Off
    - Indicator Turned On
    - Lane Controller Connected
    - Lane Controller Disconnected
    - Lane Controller Fire Input Alarm
    - Lane Controller Tamper Alarm

- Local: Login
- Local: Login Locked
- Local: Login Unlocked
- Local: Logout
- Local: Restored Default Parameters
- Local: Upgrade
- Local: Upgrade Device Firmware via USB Flash Drive
- Local: Upgrading Failed
- Low Battery Voltage
- Low Battery Voltage Recovered
- Low Storage Battery Voltage
- Motor or Sensor Exception
- No Memory for Offline Event Storage
- NTP Auto Time Synchronization
- Operation Failed: Code Not Matched with Keyfob
- Pedestal Temperature Too High
- Remote: Arming
- Remote: Capture
- Remote: Clear Card No.
- Remote: Disable Alarm Output Manually
- Remote: Disarming
- Remote: Enable Alarm Output Manually
- Remote: Export Configuration File
- Remote: Extension Module Upgraded
- Remote: Extension Module Upgrading Failed
- Remote: Fingerprint Module Upgraded
- Remote: Fingerprint Module Upgrading Failed
- Remote: Import Configuration File
- Remote: Login
- Remote: Logout
- Remote: Manual Time Synchronization

13. Shall batch add health monitoring events from Video Intercom Device:
    - Calling Surveillance Center
    - Device Armed
    - Device Arming Failed
    - Device Offline
    - Device Online
    - Device Tampered
    - Secure Door Control Unit Tampered
    - SOS
14. Shall batch add health monitoring events from Elevator Control Device:
    - Device Armed
    - Device Arming Failed
    - Device Power Off
    - Device Power On
    - Device Tampered

- Device Tamper Restored
- Distributed Controller Tampered
- Distributed Controller Tamper Restored
- Distributed Elevator Controller Offline
- Distributed Elevator Controller Online
- Edit Central Group Configuration
- Edit GPRS Parameters
- Edit Network Center Configuration
- Elevator Controller Offline
- Elevator Controller Online
- Flash Writing/Reading Exception
- Local: Restored Default Parameters
- Local: Upgrading Failed
- Low Battery Voltage Recovered
- No Memory for Offline Event Storage
- NTP Auto Time Synchronization
- Remote: Arming
- Remote: Clear Card No.
- Remote: Disable Alarm Output Manually
- Remote: Disarming
- Remote: Enable Alarm Output Manually
- Remote: Login
- Remote: Logout
- Remote: Manual Time Synchronization
- Remote: Reboot
- Remote: Restored Default Parameters
- Remote: Upgrade
- Remote: Upgrade Failed

15. Shall batch add health monitoring events from Security Control Device:
    - AC Power Down
    - Alarm Cleared
    - Auto Arming Failed
    - Away Arming
    - Battery Fault
    - BUS Open-Circuit Alarm
    - BUS Short-Circuit Alarm
    - Cellular Network Data Exceeded
    - Control Panel Reset
    - Device Armed
    - Device Arming Failed
    - Device Moved
    - Device Offline
    - Device Online
    - Device Tampered
    - Disarming
    - Duress Report

- Expander Added
- Expander Deleted
- Extension Module Disconnected
- Extension Module Exception
- Extension Module Tampered
- Forced Arming
- HDD Exception
- HDD Full
- Instant Arming
- IP Address Conflicted
- Keypad Locked
- Keypad Unlocked
- Late to Disarm
- Low Battery of Wireless Siren
- Low Battery Voltage
- Radar Transmitter Fault
- RF Signal Exception
- Stay Arming
- Tampering Alarm Started
- Telephone Communication Failed
- Video Standard Mismatch
- Virtual Zone Fire Alarm
- Virtual Zone Panic Alarm
- Wired Network Disconnected
- Wireless Network Disconnected
- Wireless Network Exception
- Wireless Repeater Added
- Wireless Repeater Deleted
- Wireless Repeater Disconnected
- Wireless Repeater Tampered
- Wireless Siren Added
- Wireless Siren Deleted
- Wireless Siren Disconnected
- Wireless Siren Tampered
- XBUS Module Disconnected

16. Shall batch add health monitoring events from Dock Station
    - Dock Station Offline
    - Dock Station Online
17. Shall batch add health monitoring events from Decoding Device
    - Decoding Device Offline
    - Decoding Device Online
18. Shall add events for Resource Groups
    - Person Amount More/Less than Threshold
    - Person Amount More/Less than Threshold (Pre-Alarm)
19. Shall batch add health monitoring events from Network Transmission Device
    - Fiber Optical Port Lost

- Network Interface Lost
- PoE-Max
- PoE Interface Powered Off
- Switch Armed
- Switch Arming Failed
- Switch Offline
- Switch Online
- Wireless Connection Disconnect
- Wireless Upstream Rate Exception

20. Shall batch add health monitoring events from Recording Server
    - Array Degradation
    - Array Detection
    - Array Expansion
    - Array Initialization
    - Array Rebuilding
    - Array Repair
    - Array Unavailable
    - Bad Disk
    - Chip Temperature Too High
    - CPU Temperature Too High
    - Disk Disconnected
    - Disk Loss
    - Disk Warning
    - Environment Temperature Too High
    - HDD Full
    - Hybrid SAN: Fan Exception
    - Hybrid SAN: Network Status Exception
    - Hybrid SAN: Power Supply Exception
    - Hybrid SAN: Storage Enclosure Exception
    - Mainboard Temperature Too High
    - Memory Exception
    - Memory Temperature Too High
    - pStor Resource Pool Exception
    - Physical Volume Alarm
    - Recording Exception Alarm
    - Recording Server Recording Exception
    - Recording Server Recording Recovered
    - Server Exception
    - System Temperature Too High
    - Video Loss Alarm
21. Shall batch add health monitoring events from the Streaming Server: Server Exception
22. Shall batch add health monitoring events from the DeepinMind Server
    - DeepinMind Server Offline
    - DeepinMind Server Online
23. Shall add events for Security Audit Server
    - Critical Event

- Normal Event
- Serious Event

24. Shall batch add Health Monitoring events from the HikCentral Professional Server
    - CPU Exception
    - CPU Recovered
    - CPU Warning
    - Hot Spare Switch
    - RAM Exception
    - RAM Recovered
    - RAM Warning
    - System Service Abnormally Stopped
    - System Service Recovered to Run
25. Shall batch add user events: User Login/Logout
26. Shall batch add User-Defined Event as System-Monitoring Event
27. Shall batch add Generic Event as System-Monitoring Event
28. If an event is added or batch added and is not configured, the Web Client will offer to activate and remotely configure, if the event type is supported on the NVR or network cameras but not configured on the device
29. Shall batch delete all invalid events
30. Shall trigger any of the above stated events as user-defined events
31. Shall convert any of the above stated events into an alarm
32. Shall enable Ignore Recurring Events for events and set threshold for ignoring events recurred in
33. For Person Amount More/Less than Threshold event of resource groups, shall set the threshold
34. Shall set the following linkage actions of System-Monitored Event:
    - Set and view Notification Schedule Template
    - Trigger recording of source related camera or up to 16 specified cameras and set pre-record and post-record duration, and video files of events can be searched and played
    - Lock video files
    - Create tag for related videos
    - Capture picture from the source camera or specified camera, and set the capture time
    - Link doors or floors. Set door status as unlock, lock, remain unlocked, or remain locked; Set floor status as free access, access with credential, temporary access, access forbidden.
    - Link alarm input
    - Link alarm output
    - Close alarm output manually or automatically
    - Trigger PTZ
    - Link third-party integrated resource
    - Send email and set the added email template. For alarm input events, attach with entry & exit counting report and link printer
    - Trigger user-defined event

K. Generic Event Configuration on Web Client: The signal that a resource (e.g., other software, device) sends when something occurs, and is received by the system in TCP or UDP data packages

1. Shall have the ability to edit the event name
2. Shall have the ability to support 'copy from' functions
3. Shall have the ability to select transport type as TCP/UDP
4. Shall have the ability to set the match type as Search/Match
5. Shall have the ability to set the expression

L. User-Defined Event Configuration on Web Client

M. Alarm Configuration on Web Client

1. Shall have the ability to configure the same events list as alarm in System-Monitored Events part
2. Same list of events listed above in section "1,2,3" shall be available to be programed as alarms on the SYS
    a. When selecting a triggering event to program as alarms, only events supported by a device will appear in the Web Client
    b. Alarm priority shall be configured to one of three levels by default:
        - High
        - Medium
        - Low
    c. Alarm Priority of up to 255 levels can be added as required
    d. Shall have the ability to set alarm type to different variation and states of response for alarm management and reporting
        - True
        - False
        - To be acknowledged
        - To be verified
        - Custom (up to additional 25 user defined status names shall be possible)
    e. Shall have the ability to view the alarm icons for alarms in Monitoring and for alarms on Map
    f. Shall set notification schedule template as schedule template or event-based
    g. Shall enable Ignore Recurring Alarms for alarms and set threshold for ignoring alarms recurred in
    h. Shall specify a user defined event or alarm input as the start or end event of the arming schedule
    i. Shall set alarm recipients from users accounts set up in the SYS
    j. Shall associate the source camera or up to 16 other cameras recording with alarm events
    k. Shall lock associated alarm event video footage, so it is not auto-erased based on the camera schedule
    l. Shall set pre-record and post-record duration
    m. Shall display the recorded video when alarm occurred or live view by default
    n. Shall associate a map with an alarm
    o. Capture picture from the source camera or specified camera, and set the capture time
    p. Shall trigger a pop-up window with an alarm event
    q. Shall display on smart wall
        - Shall display video of the camera

- Shall display public view
- Set smart wall as wall related to graphic card and select smart wall No.
- Set smart wall as wall related to decoding device and select up to 16 display windows
- Select stream type on smart wall as main stream or sub stream
- Stop displaying alarm after specified duration
- Replace it with other alarm with higher priority

r. Shall enable restrict alarm handling time and select up to 16 user-defined events and alarm outputs to trigger events if timeout occurs
s. Shall trigger audible warning
t. Shall trigger User-Defined Event

3. Shall delete invalid items (in batch)
4. Shall enable/disable alarms (in batch)
5. Shall import newly-added alarms of Remote Sites, edit the alarm name or synchronize alarm name from site, set active control, and support alarm linkage of pop-up windows, restrict alarm handling time, set trigger event if timeout, audible warning, alarm output, alarm input, display on smart wall, email linkage, and user-defined event linkage
6. Alarm source, trigger events, and alarm priority can also be displayed
7. Shall support displaying alarms in alphabetical order
8. Shall support copying alarm priority, arming schedules, receiver, pop-up window settings, trigger action controls, audio alarms, and e-mail alarms to other alarm settings
9. Shall support template replacement function when deleting arming schedule, e-mail template, alarm priority, and users shall confirm the deleting message when deleting a template
10. Shall support setting reports of events and alarms:
    a. Up to 32 events or alarms can be configured in one report, and up to 10,000 events or alarms can be calculated in total
    b. Select report type as daily or weekly
    c. Select the sending time
    d. Set the email template
    e. Select the format as Excel or PDF
11. Shall support testing alarm configuration: click the button and the system will trigger an alarm automatically

N. Alarm Center on Control Client

1. Alarm Management: Ability to receive and view alarm video pre-configured in the Web Client as alarms
2. Ability to view the following alarm information:
    a. Mark status
    b. Alarm name
    c. Alarm priority
    d. Alarm time(Control client)
    e. Alarm source
    f. Logical Area
    g. Triggering event/alarm
    h. Alarm status
    i. Alarm category
    j. Quick link:

- Alarm & event search
- Two-way audio
- Download

3. View 1 to 16 cameras associated with alarms
4. Optionally, auto view e-map and position of camera(s) on map in alarm state
5. Turn audio off/on
6. Enable/disable alarm pop-up window
7. Arm/disarm alarms
8. Display the alarm related video on smart wall
9. Click on the alarm name to access the following functions:
    a. Check detailed alarm information and capture
    b. Select alarm priority and category
    c. Add remark to the alarm
    d. Acknowledge the alarm (one by one or in a batch)
10. Set the layout of the alarm center: Display alarm related video & map, alarm related video only, or alarm related map only
11. When playing related video, shall support visual tracking
12. Supports alarm linkage to smart wall, including smart wall of graphic card and decoding device
13. Alarm linkage of smart wall supports window division and jointing
14. Central system can receive alarms from Remote Sites
15. Alarm center can display map or video, or map and video
16. Supports multiple time zones of clients
17. Supports displaying alarm video on smart wall including smart wall of graphic card and decoding device
18. Display alarms imported from third-party system

O. Alarm and Event Search on Control Client: Ability to search for alarms and events, based on the following:

1. Event Source
    - Camera
    - Door
    - Elevator
    - Alarm Input
    - ANPR
    - Person
    - UVSS
    - Remote Site
    - Encoding Device
    - Decoding Device
    - Access Control Device
    - Video Intercom Device
    - Elevator Control Device
    - Security Control Device
    - Network Transmission Device
    - Dock Station
    - Resource Group
    - Recording Server

- Streaming Server
- DeepinMind Server
- Security Audit Server
- HikCentral Professional Server
- User
- User-Defined Event
- Generic Event
- Third-Party

2. Event Type: The same event types configured on the Web Client
3. Time
   - Last Hour
   - Today
   - Yesterday
   - Current Week
   - Last 7 Days
   - Custom Time Interval
4. Ability to check and export alarms and events

P. Alarm Center on Mobile Client

1. Alarm Notification: Ability to receive pop-up alarm notifications
   a. Alarm notification includes the following information:
      - Alarm type
      - Alarm time
      - Live view of the camera
      - Playback of the camera
   b. Alarm Information: Ability to check and manage alarm history information
   c. Alarm messages shall include the following information:
      - Alarm priority
      - Alarm category
      - Alarm source
      - Alarm time
      - Alarm name
      - Whether acknowledged
      - Server time
      - Triggering event
      - Acknowledge information
2. Alarm center has the following functions:
   - Refresh to check latest alarm information
   - Filter alarm by time, marking status, alarm priority, alarm category and alarm status
   - Switch to show marked/unmarked alarm only
   - Mark alarm message
   - Live view and playback the related video
3. For iOS mobile client, the client will play audio prompt when receiving an alarm no matter the App is running background or front, when the mobile device's audio is on
4. Ability to view logs of the calls from door stations
5. Ability to view notifications about calls from door stations

3.4 Person and Visitor

A. Person Management on Web Client

1. Add a person group
2. Link person group with access group or attendance group
3. Person List
    a. Edit ID
    b. Edit first name
    c. Edit last name
    d. Select gender as male/female/unknown
    e. Set person profile
        - Collect profile by added access control device, video intercom device, or Enrollment Station
        - Take a picture by webcam
        - Upload a picture from local PC
    f. Set skin-surface temperature and temperature status
    g. Edit email address
    h. Edit phone number
    i. Edit remark
    j. Customize additional information
        - Set optional information
        - Add additional information
    k. Check the face comparison group, time and attendance group, access group and dock station group of the person
    l. Configure effective period of access control and time & attendance for the access group
    m. Enable the 'Super User' function to exempt this person from remaining locked (credentials failed) restrictions, all anti-passback rules, and first card authorization
    n. Enable the 'Extended Access' function to open the access point for longer time for person with special requirements
    o. Add the person to the existing attendance group if the person participates in time and attendance, and one person can be added only one attendance group
    p. Set credential information for the person:
        i. PIN number
        ii. Card
            - Set issuing mode as card enrollment station, card reader, or Enrollment Station
            - Set card format as normal or Wiegand
            - Set reading frequency as single or dual
            - Set card encryption
            - Audio on/off
            - Set effective period for the card
            - Up to 5 cards for one person
        iii. Fingerprint
            - Set issuing mode as USB Fingerprint Recorder, Enrollment Station, or Fingerprint and Card Reader
            - Add a new fingerprint
            - Record up to 10 fingerprints for one person
            - One fingerprint can only be related to one card

iv. Credentials under Duress: set credentials to swipe the card or scan the fingerprint under duress, and the door will be unlocked and the Control Client will receive a duress alarm to notify the security personnel

v. Credentials for Dismiss: Set credentials (card number and fingerprint) so that when an alarm is triggered, you can swipe the card or scan the fingerprint configured here. The alarm will be dismissed.

q. Add to Dock Station Group
   - Set Login Password
   - Select the existing dock station group
   - Add new dock station group

r. Set resident information
   - Link an indoor station with the person
   - Set room number of the person

s. Batch issue cards to persons

t. Batch import persons/profiles

i. Import by excel file

ii. Import by importing profiles
   - Add to person group
   - Verify face quality by device
   - Add imported person to face comparison group

iii. Import domain persons
   - Set import mode as person or group
   - Select domain person
   - Add the domain person in existing group or add new

iv. Import persons from device
   - Import from access control device
   - Import from encoding device
   - Import from facial recognition server
   - Import from Enrollment Station
   - Add to person group

u. Synchronize domain persons

v. Cancel card loss in a batch

w. Link persons with indoor stations in a batch

x. Export all persons information and set password for decompressing

y. Customizable additional information other than the basic information, such as address, income, etc.

z. Self-registration
   - Download the QR code for self-registration
   - Enable face quality verification by device
   - Enable self-verification reviewing
   - Set default person groups for self-registered persons
   - Approve or reject the self-registered persons

aa. Delete the selected persons

bb. Delete all the persons

B. Visitor Management on Web Client

1. Shall have the ability to add visitor group
2. Shall have the ability to add visitor one by one

3. Shall have the ability to import information of multiple visitors in a batch by importing an Excel file
4. When adding a visitor, shall have the ability to enter the following information:
    a. Visitor name
    b. Skin-surface temperature and temperature status
    c. License plate number
    d. ID type
    e. ID number
    f. Gender
    g. Profile
    h. Visitor group
    i. Email
    j. Phone number
    k. Company
    l. Visitee
    m. Visit reason
    n. Visit time
    o. Access group
    p. Vehicle list
5. When adding a visitor, shall have the ability to enable 'Extended Access' function to open the access point for longer time for person with special requirements
6. When adding a visitor, shall have the ability to set credential information for the person:
    a. PIN code
    b. Card
        - Set issuing mode as card enrollment station or card reader
        - Set card format as normal or Wiegand
        - Audio on/off
        - Set effective period for the card
        - Up to 5 cards for one person
    c. Fingerprint
        - Set issuing mode as USB Fingerprint Recorder or Fingerprint and Card Reader
        - Add a new fingerprint
        - Record up to 10 fingerprints for one person
        - One fingerprint can only be related to one card
7. Shall have the ability to edit information of the visitor who is checked-in
8. Shall have the ability to view QR code of the visitee
9. Visitor check-out: Shall have the ability to manually check-out and automatically check-out
10. Visitor terminal
    a. Self-Service Visitor Terminal
        - One screen which displays the operation interface for the visitors to operate by themselves
        - Visitor registration
        - Visitor check-out
    b. Staff-Service Visitor Terminal
        - Two screens. The auxiliary screen for the visitors only displays the greeting image or the facial-image-capturing interface; While the touchscreen for the reception personnel displays the operation interface.

- Visitor registration
- Visitor check-out
- View visitor details
- Export visitor information

c. System Settings
- Language
- Time
  - Time zone
  - Current time
- Person and ID comparison
  - Person and ID comparison threshold
  - Allow skipping person and ID comparison
  - Allow skipping person and ID comparison/temperature screening
- Face rating threshold
- Temperature screening
  - Temperature alarm threshold (max.)
  - Temperature alarm threshold (min.)
  - Max. measurement distance
- Visitor credential
  - Card
  - Visitor pass
- Required visitor information
- Use ID photo as profile
- Network settings
  - Wired network
  - Wi-Fi
  - Platform access
- Visitor privacy settings
  - Save and display captured face picture
  - Visitor records retention period

C. Person Management on Mobile Client

1. Registration for persons and visitors
2. Ability to set the required information such as ID, profile picture, last name, face comparison group, and effective period, and then upload the person information to the system
3. Ability to set the required information such as ID type, profile picture, last name, person group, visit purpose, and effective period, and then upload the visitor information to the system

3.5 Access Control and Elevator Control

A. Quick Start Guide on Web Client for access control to go through the configurations of access control

1. Add an access control device
2. Add a door to area
3. Add an access level
4. Add a person
5. Access control application
6. Access control test

B. Manage Access Control Devices on Web Client

1. Add access control device to the system by Hikvision Private Protocol via the following discovery options:
    a. IP Address
    b. IP Segment
    c. Batch Import
2. Add access control device to the system by Hikvision ISUP Protocol via the following discovery options:
    a. Device ID
    b. Device ID Segment
    c. Batch Import
3. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP) by Hikvision Private Protocol or Hikvision ISUP Protocol
4. Add doors to area
5. Apply time zone settings to the device
6. Synchronize name
7. Set configuration of the added devices
    a. Time settings for the device
    b. Turnstile parameters
    c. Reboot the device
    d. Restore default
    e. Custom Wiegand
    f. Linkage
    g. Card swiping parameters
    h. More remote configuration parameters
8. Refresh the status of the added devices
9. Reset device password (in batch)
10. Activate the online devices
11. Apply Application Settings: Clear the original data on the device and apply the current settings in system to the device(s) after restoring the database or device's default configurations

C. Manage Elevator Control Devices on Web Client

1. Add elevator control device to the system by Hikvision Private Protocol via the following discovery options:
    a. IP Address
    b. IP Segment
    c. Batch Import
2. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
3. Add floors to area
4. Apply time zone settings to the device
5. Synchronize name
6. Set configuration of the added devices
    a. Time settings for the device
    b. Reboot the device
    c. Restore default
    d. More remote configuration parameters

7. Refresh the status of the added devices
8. Reset device password (in batch)
9. Activate the online devices
10. Apply Application Settings: Clear the original data on the device and apply the current settings in system to the device(s) after restoring the database or device's default configurations

D. Logical View: Area Management on Web Client

1. Shall edit the following settings of doors for current site:
   a. Basic information
      - door name
      - Set door contact as normally open or normally closed
      - Set exit button type connection mode as normally open or normally closed
      - Open duration(s)
      - Extended open duration(s)
      - Enable door open timeout alarm
      - Set maximum open duration(s), and the system can receive the alarm after configuring alarm in Event & Alarm module
      - Set duress code
      - Set super password
      - Set dismiss code
      - Set free access schedule to keep the door open
      - Set access forbidden schedule to remain the door closed
   b. Related cameras
      - Link up to two camera(s) to the door to view its live view
   c. Application
      - Entry & Exit Counting: enable this function to count the persons entering and exiting the door s in the group
      - Multi-Door Interlocking: enable the multi-door interlocking function between multiple doors of the same access control device
      - Anti-Passback: The person should exist via the door in the anti-passback if he/she enters via the door in the anti-passback. It minimizes the misuse of fraudulent use of access credentials such as passing back card to an unauthorized person, or tailed access
        - Forgive anti-passback violation regularly
      - Open Door with First Card: After swiping the first card, the door will remain unlocked or be authorized. The status depends on the card swiping times (odd or even). For odd, the door will remain unlocked or be authorized. For even, it will exit the unlocked or authorized mode.
        - Enable to set remaining unlocked duration
        - Enable to set authorization: the door is locked and access is denied with credentials until you swipe the first card. After swiping the first card, the door is authorized and the persons with corresponding access level are granted to access. The authorization will be invalid at 00:00 am every day
      - Set remaining unlocked duration(s)
      - Assign the first card permission to person(s)

- Multi-Factor Authentication: The door will unlock only after multiple persons present authenticating multiple credentials in turn. Three access modes are available:
    - Unlock after access granted
    - Remotely unlock after granted
    - Enter super password after granted

d. Hardware settings
- Edit card reader parameters
    - Card reader name
    - Set polarity
    - Set card reader access mode
    - Enable custom card reader access mode
- Set minimum card swiping interval
- Set the duration of entry reset on keypad
- Enable failed card attempts alarm and set maximum failed attempts
- Enable tampering detection

e. Add face recognition terminal for the turnstile
- Add face recognition terminal by online devices
- Add face recognition terminal by IP address
- Add face recognition terminal by device ID

f. Access level
- Add the door to access level

g. Attendance settings
- Set the door as an attendance check point

h. Event settings
- Set triggering event(s) for the door
- Set linkage action for the event

i. Map settings
- Add the door to map
- Set map icons

2. Shall edit the following settings of elevators for current site:
a. Basic information
- Elevator name
- Open duration(s)
- Extended open duration(s)
- Enable elevator door open timeout alarm
- Set maximum open duration(s), and the system can receive the alarm after configuring alarm in Event & Alarm module
- Set duress code
- Set super password
- Set dismiss code

b. Manage the floors of the elevator
- Set schedule for the floor's status
    - Free access schedule: During this schedule, all the persons can access this floor even without any credentials

- Access forbidden schedule: During this schedule, no person (except for super user) can access this floor even with credentials
- Add floors to access level
- Edit floor name
- Reset imported floor No.

c. Related cameras
- Link up to two camera(s) to the elevator to view its live view

d. Hardware settings
- Edit card reader parameters
  - Card reader name
  - Set card reader access mode
  - Enable custom card reader access mode
- Set minimum card swiping interval
- Set the duration of entry reset on keypad
- Enable failed card attempts alarm and set maximum failed attempts
- Enable tampering detection

e. Event settings
- Set triggering event(s) for the door
- Set linkage action for the event

f. Map settings
- Add the elevator to map
- Set map icons

E. Access Level Configuration on Web Client

1. Add access level
   a. Add the access point(s) to the access level
   b. Select the access schedule to define in which time period the person is authorized to access the access points:
      - Customize a new schedule
      - All-day Template
      - Weekday Template
      - Weekend Template
      - Copy from other defined templates
      - Add new holiday schedule
2. Delete (all) access level(s)
3. Filter the access levels from the following conditions:
   a. Access level
   b. Access group
   c. Access schedule
   d. Access point
4. Assign the access level to some access group(s) so that the person(s) in the access group(s) will have the access permission to access the access point(s)
5. Modify the access level name, description, access point(s), access schedule, and assigned access group(s) of access level

F. Access Group Configuration on Web Client

1. Add access group
   a. Create a name for the access group

b. Link access group with person group so that the newly added person in the person group can be added to the access group automatically
c. Set person(s) in the access group
   - Add existing persons from person list, other access groups, other attendance groups
   - Add new persons
d. Set access level
   - Select the existing access level and view the access point(s) and access schedule
   - Add new access level

2. Manage the persons in the group, such as adding existing person from the person list, adding new person, editing, deleting, importing and exporting persons, etc.
3. Delete (all) the access group(s)
4. Edit the access group
5. Apply access groups to device
   a. Apply changes: Apply the person's changed (newly added, edited, deleted) access levels to the device
   b. Apply all: First, clear all the access levels configured on the device. Then, apply all the person's access levels configured in the system to the device. This mode is mainly used for first time deployment
6. Regularly apply all access groups to device: set the time and the system can apply all the access groups to the access control device on a scheduled basis

G. Access Control Test

1. Shall be able to view the status of the credentials
   a. Persons with no credential configured
   b. Persons with no card configured
   c. Persons with no fingerprint configured
   d. Persons with temporary card
   e. Persons with card reported as lost
2. Shall be able to view the status of the access control devices and elevator control deices
   a. Device name
   b. Network status
   c. Arming status
   d. Device time
   e. Persons on device and credentials on device
   f. Persons in system and credentials in system
   g. Persons applying to device failed and credentials applying to device failed
   h. Persons to be applied to device
3. Shall be able to test whether the persons can access the target access points according to the current settings
   a. Authorization settings of persons/visitors applying to device failed
   b. Authorization settings of persons/visitors applying to device succeeded
   c. Authorization settings of persons/visitors to be applied to device
4. Shall be able to test whether the access points can run according to the current settings.

H. Live View of Door-Related Camera on Control Client

1. Shall view the live video of up to two related cameras in one display window. When the door links two cameras, the video will display in Picture-in-Picture mode, and you can view the live video of the two cameras in one display window.

2. Shall support fisheye expansion, displaying camera status, setting arming control, switching stream type, viewing the live video on smart wall, displaying VCA search window, turning on/off the alarm outputs, and audio control
3. Shall control the door status as unlock, lock, remain unlocked, remain locked, and view the card swiping record in real-time
4. Shall forgive anti-passback violation
5. Shall check the turnstile status and control it as unlock, lock, remain unlocked, remain locked
6. Shall control all doors status as forbid/allow all doors access
7. Shall trigger user-defined event
8. Shall handle opening door request from video access control terminal, including voice talk and unlocking door
9. Shall show access point's real-time status
10. Shall support two-way audio between video access control terminal and control client

I. Live View of Elevator-Related Camera on Control Client

1. Shall view the live video of up to two related cameras in one display window. When the elevator links two cameras, the video will display in Picture-in-Picture mode, and you can view the live video of the two cameras in one display window
2. Shall support fisheye expansion, displaying camera status, setting arming control, switching stream type, viewing the live video on smart wall, displaying VCA search window, turning on/off the alarm outputs, and audio control
3. Shall control the floor status as temporary access, access with credential, free access, or access forbidden in real-time
4. Shall control all floors status as forbid/allow all floors access
5. Shall trigger user-defined event
6. Shall show floor's real-time status

J. Playback of Door-Related Camera on Control Client

1. Shall view the playback of up to two cameras in one display window
2. Shall trigger user-defined event

K. Playback of Elevator-Related Camera on Control Client

1. Shall view the playback of up to two cameras in one display window
2. Shall trigger user-defined event

L. Control Door Status in Real-Time on Control Client

1. Lock door
2. Unlock door
3. Remain door unlocked
4. Remain door locked
5. Recover door status
6. Control status of all the doors or part of the doors in specified emergency operation group

M. Control Elevator Status in Real-Time on Control Client

1. Temporary access
2. Access with credential
3. Access forbidden
4. Free Access
5. Recover floor status
6. Control status of all the floors or part of the floors in specified emergency operation group

N. Access Control Retrieval on Control Client and Mobile Client

1. Search access records
    a. Support searching access events
    b. Support viewing access event related video
    c. Support viewing the person profile, card number, person name, ID, time, access point, access result, and access mode
    d. Supports forgiving anti-passback violations
    e. Support forgiving all the anti-passback violation events in the search result
    f. Support downloading the searched person information
    g. Support filtering results by normal person and visitor
    h. Support exporting card swiping records
2. Perform entry & exit counting
    a. Select one entry & exit counting group
    b. Select persons
    c. Search records within 24 hours
    d. Set entry & exit counting type as people stayed/ people exited/all
    e. View event details: profile, name, entry & exit counting type, phone number, location of last access
    f. Display the access direction (entering/existing) of turnstile
    g. Download single record
    h. Export all searched records in excel format

3.6 Video Intercom

A. Manage Video Intercom Devices on Web Client

1. Add indoor station and door station to the system by Hikvision Private Protocol via the following discovery options:
    a. IP Address
    b. Batch Import
2. Add outer door station and master station to the system by Hikvision Private Protocol via the following discovery options:
    a. IP Address
3. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
4. Set device location information including community, building, unit, and room for indoor station
5. Set device location information including community, building, unit for door station
6. Set device location information including community for outer door station and master station
7. Add floors to area
8. link indoor station with resident
9. Apply time zone settings to the device
10. Set configuration of the added devices
    a. Time settings for the device
    b. Calling management center settings for door station
    c. Card encryptions for door station and outer door station
    d. Set related cameras for indoor station
    e. Reboot the device
    f. Restore default
    g. More remote configuration parameters

11. Refresh the status of the added devices
12. Reset device password (in batch)
13. Activate the online devices
14. Apply Device Settings: Clear the original data on the device and apply the current settings in system to the device(s) after restoring the database or device's default configurations

B. Video Intercom on Control Client and Mobile Client

1. Shall view live videos of door's related camera(s)
2. Shall control doors to lock, unlock, remain locked, or remain unlocked during live view
3. Shall call the added indoor station for starting voice talk with the resident, viewing the video of the indoor station's camera, etc.
4. Shall answer the call from the added door station and open door if needed

3.7 Time and Attendance

A. Attendance Group Configuration on Web Client

1. Add attendance group
   a. Edit the attendance group name
   b. Configure effective period for the group
   c. Link attendance group with person group so that the newly added person in the person group can be added to the attendance group automatically
   d. Add person to the group
      - Add existing person from person list or other access group
      - Add new person
   e. Set the shift schedule for the persons in the group
      - Set shift type as fixed
      - Set shift type as flexible
      - Set holiday schedule
   f. Set the time zone
2. Edit the added attendance group
3. Manage the persons in the group, such as adding existing person from the person list, adding new person, editing, deleting, importing and exporting persons, etc.
4. Delete (all) attendance group(s)

B. Set General Attendance Rules Configuration on Web Client

1. Set weekends
2. Define absence
   a. If check in late for longer than the threshold, mark as absent
   b. If check out earlier for longer than the threshold, mark as absent
   c. If no check-in, mark as absent or late
   d. If no check-out, mark as absent or early leave
3. Set time point for attendance result auto-calculation

C. Define Overtime Configuration on Web Client

1. Set work hour rate
2. Define overtime in workdays
   a. Enable/disable overtime on workdays
   b. Set calculation mode as By Total Work Hours
   c. Define valid overtime if overtime exceeds required work hours for certain minutes.
   d. Set daily overtime level
   e. Set calculation mode as By Total Work Hours or By Time Periods

f. Count early check-in as overtime
g. Count late check-out as overtime
h. Set daily overtime level

3. Define overtime on weekends
   a. Enable/disable overtime on weekends
   b. Define valid overtime if works longer than certain minutes
   c. Set maximum length of overtime
   d. Set overtime level for overtime on weekends
4. Define overtime on holidays
   a. Define valid overtime of overtime is longer than certain minutes
   b. Set maximum length of overtime
   c. Set overtime level for overtime on holidays

D. Set Attendance Check Point on Web Client

1. Add the access point as attendance check point
2. Add the facial recognition camera as attendance check point
3. Attendance check point type includes: check-in & out, check-in only, check-out only

E. Define Leave on Web Client

1. Define major types of leaves
2. Define minor types of leaves

F. Set Timetable on Web Client

1. Set a name for the timetable
2. Set the timetable type as timetable for normal shift: the required start-work time and end-work time is fixed
   a. Set scheduled work time
   b. Set minimum work hours
   c. Set flexible mode as Allow Late/Early Leave and set allowable duration respectively
   d. Set flexible mode as Flexible Period and set the flexible duration
   e. Set break time calculation mode as Auto Deduct or Must Check, and set the break duration
   f. Set the valid check-in/out period
3. Set the timetable type as timetable for man-hour shift: no required start-work time and end-work time, but the minimum work hours should be met
   a. Set break time calculation mode as Auto Deduct or Must Check, and set the break duration
   b. Set valid check-in/out period
   c. Set minimum work hours

G. Set Shift Schedule on Web Client

4. Set a name for the schedule
5. Copy the settings from other existing shift schedule
6. Set repeat by week: the schedule will repeat every 7 days or two weeks based on the week
7. Set repeat by day(s)
   a. Set the frequency of repeat days
   b. Set the start date for reference
8. Set the schedule type as normal shift or man-hour shift
9. Set the timetable for the schedule
10. Set access record calculation mode as First In & Last Out or Each Check-In/Out

11. Enable Time and Attendance status on device so that the attendance status set on the attendance terminal is valid
12. Add holidays to define the special days when the shift schedule is disabled
13. Assign shift schedule to attendance group

H. View Attendance Record on Web Client

1. Filter the attendance records according to the following conditions:
    a. Time Period
    b. Time
    c. Attendance group
    d. Person name
    e. Status
2. View the attendance details and the person's attendance report for one day
    a. Person name
    b. ID
    c. Date
    d. Attendance group
    e. Status
    f. Scheduled work time
    g. Required work hours
    h. Actual work time
    i. Late duration
    j. Early leave duration
    k. Break duration
    l. Leave duration
    m. Overtime 1 duration
    n. Overtime 2 duration
    o. Overtime 3 duration
3. View the attendance details and the person's attendance report for more than one day
    a. Person name
    b. ID
    c. Attendance group
    d. Times of late and specific date
    e. Times of early leave and specific date
    f. Times of absent and specific date
    g. Times of late and early leave and specific date
    h. Times of normal and specific date
    i. Actual work hours
    j. Break duration
    k. Times of leave and specific date
    l. Total overtime duration
4. Get attendance records from managed devices
5. Calculate attendance again manually
6. Handle exceptional records
    a. Correct check-in/out time
    b. Apply for leave
    c. Handle for one record or for multiple records in a batch
7. Export the filtered attendance records
    a. Set the format of the exported file

b. Select the items for export
c. Export attendance details

8. View handling records
9. Search the history attendance result even if this person has been deleted from the system
10. When the device is online, upload the records to system of the device offline duration
11. Support different time zone of the device and HikCentral Professional platform

I. View and Export Attendance Reports on Web Client

1. Export normal attendance report
   a. Department report
   b. Daily report
   c. Monthly overview
   d. Access records
   e. Start/End work time
   f. First/Last Access
2. Export Abnormal attendance report
   a. Abnormal overview
   b. Absence
   c. Early leave
   d. Late
   e. Check-in/out correction
   f. Leave
3. Export overtime report
   a. Monthly Overtime Details
   b. Monthly Overtime Overview
4. Select the person or department for the report
5. Set time range of the report
6. Set format of the report
7. Set display rules of attendance reports
   a. Company information: company name and logo
   b. Format of date and time
   c. Marks of different status

3.8 Security Control

A. Manage Security Control Devices on Web Client

1. Add security control device to the system by Hikvision Private Protocol via the following discovery options:
   a. IP Address
   b. Hik-Connect
   c. IP Segment
   d. Port Segment
   e. Batch Import
2. Add security control device to the system by Hikvision ISUP Protocol via the following discovery options:
   a. Device ID
   b. Device ID Segment
   c. Batch Import

3. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
4. Add alarm inputs and other channels to area
5. Apply time zone settings to the device
6. Set remote configuration of the added security control devices
7. Refresh the status of the added devices
8. Reset device password (in batch)
9. Activate the online devices

B. Logical View: Area Management on Web Client

1. Select security control device's zones as alarm inputs to add into the area
2. Set defense schedule for the arming mode in different time periods for the partitions of the added security control devices
3. Arm/disarm radar

C. View Radar-Related Live View on Control Client

1. Shall view the live video of the radar's calibrated cameras.
2. Shall arm or disarm the radar's zones
3. Shall show the people's moving pattern tracked by the radar on the map

D. View Radar-Related Playback on Web Client

1. Shall view the playback in one display window
2. Shall trigger user-defined event

3.9 ANPR and Entrance & Exit Control

A. Manage Vehicle Information on Web Client

1. Add a vehicle list
   a. List name
   b. List color
   c. Entry & exit rule
   d. Parking space control
   e. Effective period
   f. Description
2. Import vehicle lists in batch
3. Export vehicle list
4. Delete vehicle list
5. Delete vehicle information in one list
6. Rename vehicle list name
7. Replace repeated license plate number when import vehicle list
8. Add basic vehicle information in one list, i.e. license plate number, vehicle type, vehicle color, effective period, brand, owner name (first name and last name) and phone number, card number of the owner
9. Upload undercarriage picture to view both the current vehicle's captured undercarriage picture and the uploaded picture for comparison

B. Set Parking Lot Information on Web Client

1. Add one parking lot
   a. Parking lot name
   b. Capacity
   c. Free parking spaces
   d. Maximum parking duration

e. Expiration prompt
2. Add entrance and exit to the parking lot
3. Add lane to the entrance and exit
   a. Lane type: Entrance or Exit
   b. Lane name
   c. Link a capture unit with the lane
   d. Link an access control device or video intercom device with the lane for opening barrier by card or video intercom
   e. Link a display screen with the lane
   f. Set device for barrier control
4. Set content displayed on the display screen
   a. Display mode: Still, scroll up, scroll down, scroll left, scroll right
   b. Font Color
   c. Alignment: Align left, align right, align center
   d. Text on Screen: Plate number, entering time, parking duration, and expiration prompt

C. Set Entry & Exit Rules on Web Client

1. Set rules for vehicles in the vehicle list
   a. Rule name
   b. Open barrier for entering: Automatically or manual
   c. Open barrier for exiting: Automatically or manual
   d. Schedule: All-day or custom
2. Set rules for vehicles in the vehicle list
   a. Open barrier for entering: Automatically or manual
   b. Open barrier for exiting: Automatically or manual
   c. Schedule: All-day or custom

D. ANPR Camera Live View on Control Client

1. Ability to display license plate number when viewing LPR camera after the LPR function is activated in license
2. Ability to mark a vehicle license plate number
3. Ability to add the vehicle to vehicle list
4. Ability to go to Vehicle Search by quick link:
   a. Label
   b. License Plate number
   c. Vehicle passing time
   d. Camera name
   e. Owner
   f. Phone
   g. Country/region
   h. Operation
      - Add to vehicle list
      - Download
5. View the live video of the UVSS's linked camera, the undercarriage picture, and recognized license plate number of the passing vehicles
6. Drag on the undercarriage picture to mark important information
7. Mark the vehicle license plate number

E. UVSS Live View on Control Client

1. View the live video of the UVSS's linked camera, the undercarriage picture, and recognized license plate number of the passing vehicles
2. Perform the following operations in live view：
    a. Mark on undercarriage picture
    b. Mark vehicle
    c. Add vehicle to vehicle list
    d. Search vehicle

F. Entrance & Exit Control on Control Client

1. Vehicle real-time number of free parking spaces and total capacity of the parking lot
2. View information of vehicles entered or exited from the parking lot
    a. Vehicle picture
    b. License plate number
    c. Vehicle list
    d. Direction
    e. Entering/Exiting time
    f. How to open barrier
    g. Allowed or not
3. Add the new detected vehicle to the vehicle list
4. Search logs of recognized vehicle license plate and the related vehicle passing information
5. Mark vehicle if needed
6. Open barrier automatically according to the configured entry & exit rule
7. Open barrier automatically after the vehicle owner swiping her/his card
8. Open barrier manually and enter remark information (optional)
9. Open barrier manually during video intercom
10. Correct the license plate numbers recognized by capture units
11. Barrier control to open, close, or remain the barrier open

G. Vehicle Search on Control Client

1. Support searching vehicles via ANPR camera or UVSS
2. Support filtering vehicles via the marked/unmarked status, country/region, plate number, owner, or time
3. Support searching vehicles with no license plate
4. Support adding tag
5. Support viewing the label status, plate number, vehicle passing item, camera, owner, phone number, country/region of the vehicle
6. Support adding the vehicle to vehicle list
7. Support downloading the vehicle information and video
8. Support viewing the captured vehicle picture, undercarriage picture, or related video
9. Support exporting the searched vehicle records and downloading the related video
10. Support modifying the recognized license plate number

3.10 Face and Body Recognition

A. Manage DeepinMind Server on Web Client

1. Add facial recognition server
    a. Enable WAN access
    b. Add cameras to facial recognition server
2. Add behavior analysis server
    a. Enable WAN access

b. Add cameras to behavior analysis server for analysis tasks

B. Face Comparison Group Management on Web Client

1. Add face comparison group
   a. Group name
   b. Set similarity threshold
   c. Add description
   d. Add person(s) to the group
      - Add existing persons from person list or other face comparison groups
      - Add new persons
   e. Remove the person(s) from the face comparison group
2. Edit the face comparison group and view the cameras that it is applied to
   a. Delete the face comparison group
   b. Delete all the face comparison groups
3. Apply the face comparison group(s) to camera(s)

C. View Detected and Matched Face in Live View on Control Client and Mobile Client

1. View the face comparison information between the detected faces and the face pictures in the selected face comparison group
2. Display person's profile (configured in the Web Client):
   a. Captured time
   b. Compared result
   c. Device name
   d. Face comparison group
   e. Gender
   f. ID number
   g. Email address
   h. Phone number
3. Search video of the person by the captured face picture
4. Add mismatched person to person list
5. Display the similarity between the captured face picture and the original face picture in person list

D. Person Search on Control Client and Mobile Client

1. Search by Face Picture: Ability to search face picture to view face-related face pictures and videos. It includes 3 types:
   a. Search matched pictures: Ability to search videos of a person who is added to the face comparison group
   b. Search captured pictures: Ability to search related videos of an uploaded face picture by camera, time, person information, and similarity
   c. Search frequently appeared persons: Ability to search persons who appear frequently
2. Search by Archive
   a. The system will save the features and information (including captured picture and video) of the captured person as archive.
   b. Ability to upload a picture and search the related archives of a face picture to check the captured pictures or videos of similar persons
   c. Ability to adjust the similarity
   d. Ability to check whether a person is a stranger
   e. Ability to export the search results
3. Search by Identity Verification

a. Ability to upload a picture and search the persons who are similar with the person in the picture. Check the matched person information
b. Ability to upload two pictures and compare them to see the similarity of the persons in those two pictures
c. Ability to adjust the similarity

3.11 Temperature Screening and Mask Detection

A. Set skin-surface temperature when adding persons and visitors

B. Temperature Screening Configuration on Web Client

1. Group temperature screening points
2. Configure temperature screening parameters
   a. Temperature screening threshold
   b. Alarm threshold

C. Real-Time Skin Surface Temperature Monitoring on Web Client and Control Client

1. View detected people information in real-time
2. View skin-surface temperature of the detected people
3. View whether the people wears a mask
4. View triggered alarms

D. Real-Time People Counting on Control Client

1. View number of people in specified region in real-time
2. Triggers an alarm when the number of people exceeds the configured threshold and highlights the region on the map

E. Search History Temperature Screening Data on Web Client

F. People Registration on Web Client

1. Register the person information for the persons detected
2. Custom registration template
3. View registered person information

G. Generate Report on Web Client

3.12 Dock Station

A. Manage Dock Station Devices on Web Client

1. Add devices to the system via the following discovery options:
   c. IP Address/domain
   d. IP Segment
   e. Port Segment
   f. Batch Import
2. Apply time zone settings to the device
3. Add to dock station group

B. Dock Station Group Management on Web Client

1. Add dock station group
   a. Edit the dock station group name
   b. Add person to the group
      - Add existing person from person list
      - Add new person
   c. Set dock stations for the persons in the group. The videos stored in the persons' body cameras can be uploaded to these dock stations
   d. View the details of the added attendance group

e. Group name
f. Shift schedule
g. Attendance shift schedule on every day

2. Edit the added attendance group
3. Manage the persons in the group, such as adding existing person from the person list, adding new person, editing, deleting, importing and exporting persons, etc.
4. Delete (all) dock station group(s)

3.13 Smart Wall

A. Smart Wall Configuration on Web Client

1. Shall add up to 32 smart walls and display multiple smart walls
2. Shall add up to 32 decoding devices and video wall controllers
3. Shall delete, edit, and view the added walls
4. Shall add online decoding devices via SADP in the same local subnet with the Web Client /SYS Server or add decoding devices or video wall controllers via IP address, and batch add decoding devices via IP segment, and port segment modes
5. Shall activate and refresh decoding devices
6. Shall edit the device's network location as LAN IP address, or WAN IP address
7. Shall support the linkage between decoding device's or video wall controller's decoding outputs and smart wall windows
8. Shall set the decoding output of the decoder as the signal input of video wall controller
9. Shall set role permission of smart walls, decoding devices, and windows
10. Shall support alarm linkage of smart walls, select walls and windows for alarm linkage, divide windows according to the number of alarms, and select wall related to graphic card or decoding device
11. Shall support smart wall database backup and restoration via hot spare

B. Smart Wall (Graphic Card) on Control Client

1. Display all contents in live view on smart wall
2. Display live view of one camera on smart wall
3. Display live view of all cameras in one area on smart wall
4. Display e-map and GIS map on smart wall
5. Display view and view group on smart wall
6. Display alarm's related video on smart wall
7. Display Health Monitoring page on smart wall

C. Smart Wall (Decoding Device) on Control Client

1. Shall synchronize the logging mode with the video surveillance client
2. Shall refresh and synchronize the smart wall information
3. Shall select camera or signal source as the encoding device type
4. Shall add view and view group, edit view name and view group name, and delete view and view group
5. Shall support auto-switch of views belonging to the same view group, and set time interval between views
6. Shall save views, and sort views via created time or manually
7. Shall create a roaming window, adjust window size, enlarge window, and display window on top layer
8. Shall view the camera status, switch stream type, enable PTZ control, switch to playback, or stop decoding and displaying during live view on smart wall

9. Shall support window division of up to 36 windows, window jointing, and display/hide the window ID for Keyboard usage
10. Shall view, download and print the window No. and camera ID
11. Shall enable auto-switch stream type and view window No. and camera ID
12. Shall lock/unlock the selected window
13. Shall decode and display a Remote Site's cameras and current site's cameras on the smart wall for the functions of live view, playback, and displaying related video of alarm
14. Shall display live view of cameras of added video security control panels and video access control terminals
15. Shall support PTZ control, auto-switch stream type, switching to sub-stream manually, and stopping decoding manually
16. Shall display alarm-related video on smart wall, and mark on the alarm window
17. Shall query smart wall logs
18. Shall display one smart wall in the center, or up to three walls side-by-side
19. Shall switch to alarm center to check alarm list

3.14 Intelligent Analysis

A. Set Resource Groups for Intelligent Analysis on Web Client

B. Intelligent Analysis on Web Client, Control Client, and Mobile Client (HD)

1. Dashboard
    a. Ability to add reports to customized Dashboard, including people counting report, queue analysis report, heat analysis report, pathway analysis report, person feature analysis report, temperature analysis report, vehicle analysis report
    b. Ability to add/delete dashboard, edit dashboard name.
    c. Ability to save different reports as a Dashboard, export Dashboard data, display Dashboard on auxiliary screen.
2. People Counting
    a. Ability to select network cameras enabled with people counting analytics or configured people counting groups to calculate people counting for each camera or in one region
    b. Ability to view the people counting statistics in a line chart or histogram, and switch between line chart and histogram
    c. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
    d. Ability to select shorter time period to view more detailed data of each camera
    e. Ability to export the detailed data of counting report in CSV/Excel format
    f. Ability to search the video linkage by month, date, week, hour, and play corresponding video to check people counting
    g. Ability to display up to 20 people counting cameras with different colors in people counting report of entry/exit
    h. Ability to view entered/exited/both entered and exited statistics
    i. Ability to show/hide data of certain cameras
    j. Ability to view both entered and exited statistics of single cameras
    k. Ability to play linked video of camera(s)
    l. Ability to add report to dashboard
3. People Density Analysis
    a. Ability to select network cameras enabled with people density analytics to calculate people counting for each camera or in one region

b. Ability to view the people counting statistics in a line chart or histogram, and switch between line chart and histogram
c. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
d. Ability to select shorter time period to view more detailed data of each camera
e. Ability to export the detailed data of counting report in CSV/Excel format
f. Ability to search the video linkage by month, date, week, hour, and play corresponding video to check people counting
g. Ability to show/hide data of certain cameras
h. Ability to view both entered and exited statistics of single cameras
i. Ability to play linked video of camera(s)
j. Ability to add report to dashboard

4. Queue Analysis
   a. Ability to generate a report to show the number of queue exceptions and number of persons in each queue
   b. Ability to display the queue status including waiting duration and queue length
   c. Ability to generate the report as daily, weekly, monthly, or annual report
   d. Ability to set the time period in the time field for statistics
   e. Ability to set the waiting duration to display the number of persons in each queue who have waited for specified duration at different time points
   f. Ability to set the queue length to display how many seconds each queue status lasts
   g. Ability to show/hide certain data of certain element
   h. Ability to view the report of the single queue, including the number of exceptions, number of people in queue, and waiting duration
   i. Ability to switch between number of exceptions, number of people, and queue length
   j. Ability to set the report type and report time
   k. Ability to select shorter time period to view more detailed data of each queue
   l. Ability to select the queue exception, people amount exceeding, waiting timeout, person amount in queue, queue status to export
   m. Ability to select the saving path
   n. Ability to set the format as Excel or CSV
   o. Ability to add report to dashboard
5. Heat Analysis
   a. Ability to select network cameras enabled with heat map analytics or configured heat analysis groups to calculate heat for each camera or in one region
   b. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
   c. Ability to calculate people dwell time, people amount, and average dwell time
   d. Ability to export heat map report in PDF/Excel format
   e. Ability to add report to dashboard
6. Pathway Analysis
   a. Ability to calculate the number of people walking by
   b. Ability to set the time as daily, weekly, monthly, annually, or custom time interval
   c. Ability to generate the report to view the line chart or heat map of the people amount
   d. Ability to export heat map report in PDF/Excel format
   e. Ability to add report to dashboard
7. Person Feature Analysis

a. Ability to select network cameras enabled with feature analytics or configured person feature analysis groups to calculate the features of detected people for each camera or in one region
b. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
c. Ability to calculate the age and gender of the detected people
    - Gender: Male and female
    - Age: Infant, child, teenage, adolescent, youth, prime, middle-aged, middle and old age, elderly
d. Ability to export report in CSV/Excel format
e. Ability to add report to dashboard

8. Temperature Analysis
    a. Ability to display the number of exceptions (temperature too high or too low) and maximum/minimum temperature of different thermometry points on different presets
    b. Ability to select the report type as daily report, weekly report, monthly report, annual report, or customize the time interval for a report
    c. Ability to show/hide certain data of preset or thermometry point
    d. Ability to display temperature report of single preset
    e. Ability to display temperature report of single thermometry point
    f. Ability to display the number of exceptions that the temperature at this thermometry point is higher or lower than the pre-defined temperature
    g. Ability to display the maximum/minimum temperature at this thermometry point during the set time period
    h. Ability to select the camera and preset, and set the report type and report time
    i. Ability to select shorter time period to view more detailed data
    j. Ability to export the number of exceptions on temperature of each thermometry point
    k. Ability to export the maximum temperature and minimum temperature of each thermometry point
    l. Ability to set the saving path of the report
    m. Ability to export the report in the format of Excel or CSV
    n. Ability to add report to dashboard
9. Vehicle Analysis
    a. Ability to display the number of passing vehicles detected by the specified cameras during specified time period
    b. Ability to select up to 20 ANPR camera for statistics at the same time
    c. Ability to select the report type as daily, weekly, monthly, annual report or customize the time interval
    d. Ability to select shorter time period to view more detailed data
    e. Ability to customize the saving path of the report
    f. Ability to export the report in the format of Excel or CSV
    g. Ability to add report to dashboard
10. Skin-Surface Temperature Analysis
    a. Ability to select temperature screening point or person group as the analysis type
    b. Ability to select the report type as daily, weekly, monthly, annual report or customize the time interval
    c. Ability to select shorter time period to view more detailed data
    d. Ability to customize the saving path of the report
    e. Ability to export the report in the format of Excel or CSV

3.15 Remote Site Management (RSM)

A. Manage Remote Sites on Web Client

1. You can add other HikCentral Professional without RSM module to the HikCentral Professional with RSM module as the Remote Site for central management
2. HikCentral Professional shall support up to 2,048 resources by distributed deployment, including encoding devices, access control devices, and Remote Sites
3. HikCentral Professional shall support 100,000 cameras via Remotes Sites
4. Add Remote Sites via IP/domain
5. Add Remote Sites registered to Central System (in batch)
6. Add Remote Sites in batch
7. After adding Remote Sites, channels shall display according to permission, and the Central System list will be the same as Remote Sites list
8. Support database backup of Remote Sites, up to 5 copies of database backup for each Remote Sites are supported, and saving paths cannot be edited
9. Import Remote Site alarms (support filtering by source, triggering event, and alarm priority)
10. Shall have the ability to display the online/offline status of Remote Sites in Central System
11. Support logging in to Remote Sites and configuring Remote Sites
12. Synchronize Remote Site names in the Central System manually
13. Refresh Remote Site channels manually, after channels of Remote Sites are added or deleted, users can update the changes from the Remote Site
14. Synchronize channel names manually
15. Edit Remote Site names, IPs, ports, user names, passwords, and description information
16. Configure GIS location of Remote Sites
17. View the Remote Site's GIS location, hot spot, and hot region settings in Map module
18. Import cameras in logical view after channel updates of Remote Sites
19. Remind users of deletion and display offline devices after deleting channels on Remote Sites
20. Import areas of added cameras on Remote Sites into the Central System

B. Backup Remote Site's Configured Data in Central System on Web Client

1. Set scheduled database backup
2. Set maximum number of backup
3. View the database saving path in Central System

C. View Resource Changes on Remote Site

1. Newly added cameras
2. Deleted cameras
3. Name changed cameras
4. Synchronize the resources in the Central System with the Remote Site
5. Remove the deleted cameras from the Central System in batch

END OF SECTION

Part 4 Execution

4.1 Examination

A. Inspect chosen area of installation prior to receiving devices and report any conditions that affect the installation process or any subsequent operation.

B. Please do not begin installation until all unacceptable conditions are rectified.

4.2 Preparation

A. Devices packaged in such way to help prevent any damage during construction.

4.3 Installation

A. Devices shall be installed in accordance with the manufacturers' instructions provided, as well as instructions based off any indicated floor design specifications.

B. Location of installation shall provide reasonable conditions for optimum device functionality. Temperature and humidity level conditions shall be taken into consideration.

C. All installations shall be performed with qualified service professionals only.

D. All devices shall be installed in accordance with the National Electric Code or applicable local codes.

E. Ensure location of installation provides a minimum possibility of accidental damage.

4.4 Field Quality Control

A. Assess the compatibility of mounting screws for all equipment to be installed.

B. Properly test all video systems against standard operational requirements.

C. Define, conclude, and report all issues with equipment to the manufacturers' customer service representatives.

4.5 Adjusting

A. Execute the necessary modifications to the Video Management System for proper operation in accordance with the instructions provided by the manufacturer.

B. Ensure the customers unique requirements are reflected in the camera settings.

4.6 Demonstration

A. Upon final inspection, validate the video solutions system and its device functions correctly.

END OF SECTION

Part 5 Appendix

5.1 Server Logs

The server logs file refer to the logs files stored in the SYS server on the Current Site and the Remote Site

5.1.1 Error Logs

The Error Log shall be searchable by the following subcategories:

Adding Access Control Device Failed
Acknowledging Alarm Failed
Activating License Failed
Add Application Data Server Error
Add Entry & Exit Counting Rule Failed
Add Leave Application in a Batch
Add Major Leave Type
Add Minor Leave Type
Add Visitor
Add Visitors in a Batch
Adding Access Point Failed
Adding Anti-Passback Rule Failed
Adding Dashboard Failed
Adding Decoding Device Failed
Adding DeepinMind Server Failed
Adding Element to Access Level Failed
Adding Elevator Control Device Failed
Adding Encoding Device Failed
Adding Facial Recognition Server Error
Adding Location for GIS Resource Group Failed
Adding Location for Resource Group Failed
Adding Multi-door Interlocking Rule Error
Adding Person Group Failed
Adding Radar Element Failed
Adding Recording Server Failed
Adding Resource Group for Alarm Failed
Adding Resource Group for Heat Analysis Failed
Adding Resource Group for Pathway Analysis Failed
Adding Resource Group for People Counting Failed
Adding Resource Group for Person Features Failed
Adding Security Audit Server Failed
Adding Smart Wall Failed
Adding Streaming Server Failed
Adding Tag Failed
Adding txt Template for Attendance Report Failed
Adding UVSS Failed
Adding View for Smart Wall Failed

Adding View Group for Smart Wall Failed
Adding View Schedule Failed
Adjusting Order of Smart Wall Views
Adjusting Screen Brightness Failed
Adjusting Screen Contrast Failed
Adjusting Screen Resolution Failed
Adjusting Screen Saturation Failed
Alarm Output Operation Failed
Answering Call Failed
Applying Leave for One Person Failed
Arming /disarming in Live View Failed
Arming Failed
Assigning Floor to Access Level Failed
Backing Up Access Events Failed
Batch Displaying Live View on Smart Wall Failed
Calculating Attendance Manually Failed
Capture in Live View Failed
Capture in Playback Failed
Changing Auto-Switching Interval on Smart Wall Failed
Checking Details in Live View Failed
Checking Details in Playback Failed
Closing Screen Failed
Correct Attendance Records in a Batch
Creating Roaming Window Failed
Data Backup Plan Failed
Database Backup Right Now Failed
Database Restore Failed
Deactivating License Failed
Delete Attendance Handling Records in a Batch
Delete Major Leave Type
Delete Minor Leave Type
Delete Visitor
Delete Visitors in a Batch
Deleting Dashboard Failed
Deleting Decoding Device Failed
Deleting DeepinMind Server Failed
Deleting Elevator Control Device Failed
Deleting Linkage Configuration for Access Control Device Failed
Deleting Location for GIS Resource Group Failed
Deleting Location for Resource Group Failed
Deleting Person Group in a Batch Failed
Deleting Radar Element Failed
Deleting Resource Group for Alarm Failed
Deleting Resource Group for Heat Analysis Failed
Deleting Resource Group for Pathway Analysis Failed
Deleting Resource Group for People Counting Failed

Deleting Resource Group for People Features Failed
Deleting Roaming Window Failed
Deleting Security Audit Server Failed
Deleting Smart Wall Failed
Deleting txt Template for Attendance Report Failed
Deleting View for Smart Wall Failed
Deleting View Group for Smart Wall Failed
Deleting View Schedule Failed
Digital Zoom in Live View Failed
Digital Zoom in Playback Failed
Disabling VCA Display Failed
Disarming Failed
Disarming Radar Failed
Displaying Alarm on Smart Wall Failed
Displaying Auto-Switch in One Window Failed
Displaying Auto-Switch in Tile Mode Failed
Displaying Real-Time Person Number Failed
Displaying Window on Top Layer Failed
Download QR Code
Edit Configuration of Third-Party Database
Edit General Rule
Edit Major Leave Type
Edit Minor Leave Type
Edit Overtime
Edit Relation between Person Group and Other Groups.
Edit Security Settings Failed
Edit Visitor
Editing Attendance Point Failed
Editing Attendance Report Display Failed
Editing Camera's Virtual Tracking Failed
Editing Configuration of DeepinMind Server Failed
Editing Dashboard Failed
Editing Decoding Device Failed
Editing DeepinMind Server Failed
Editing Element in Access Level Failed
Editing Elevator Control Device Failed
Editing Location for GIS Resource Group Failed
Editing Location for Resource Group Failed
Editing Logo of Attendance Report Failed
Editing OpenAPI configuration Failed
Editing Person Group Failed
Editing Persons in Access Group by Group Failed
Editing Persons in Attendance Group by Group Failed
Editing Radar Element Failed
Editing Resource Group for Alarm Failed
Editing Resource Group for Heat Analysis Failed

Editing Resource Group for Pathway Analysis Failed
Editing Resource Group for People Counting Failed
Editing Resource Group for People Features Failed
Editing Secret Key for File Transmission Failed
Editing Security Audit Server Failed
Editing Security Audit Server's Linked Device Failed
Editing Smart Wall Failed
Editing txt Template for Attendance Report Failed
Editing View for Smart Wall Failed
Editing View Group for Smart Wall Failed
Editing View Schedule Failed
Enabling VCA Display Failed
Enlarging Roaming Window Failed
Enlarging Sub-Window Failed
Exit: Locking Door Failed
Exit: Remaining Door Locked Failed
Exit: Remaining Door Unlocked Failed
Exit: Unlocking Door Failed
Exporting Heat Analysis Report of Resource Group Failed
Exporting Matrix Data of Heat Analysis Failed
Exporting People Counting Report of Resource Group Failed
Exporting Person Feature Report Failed
Exporting Person Feature Report of Resource Group Failed
Exporting Queue Report of Camera Failed
Fast Forward Playback on smart wall Failed
Fisheye Expansion in Live View Failed
Fisheye Expansion in Playback Failed
Floor Control: Access Forbidden Failed
Floor Control: Access With Credential Failed
Floor Control: Free Access Failed
Floor Control: Temporary Access Failed
Getting Devices’ Card Swiping Records Failed
Getting Heat Analysis Report of Resource Group Failed
Getting People Counting Report of Resource Group Failed
Getting Person Feature Report Failed
Getting Person Feature Report of Resource Group Failed
Getting Recording Schedule on Camera Error
Going to VCA Search in Live View Failed
Going to VCA Search in Playback Failed
Importing Face Comparison Groups from Device Failed
Instant Playback Failed
Linkage Configuration for Access Control Device Failed
Linking Decoding Output with Smart Wall Failed
Live View on Smart Wall via Network Keyboard Failed
Locking All Doors Failed
Locking Door Failed

Locking Failed
Locking Video File Failed
Login via Network Keyboard Failed
Logout via Network Keyboard Failed
Managing Persons in Face Comparison Group by Group Failed
Marking Alarm Failed
Moving Roaming Window Failed
Obtaining Live View Parameters via Network Keyboard Failed
Opening Screen Failed
Pausing Camera Auto-Switch on Smart Wall Failed
Pausing Playback on Smart Wall Failed
Performing Window Division via Network Keyboard Failed
Processing Call Failed
PTZ Control Failed
PTZ Control in Live View Failed
Recovering All Doors Failed
Recovering All Failed
Refreshing Decoding Device Failed
Refreshing Security Audit Server Failed
Remaining All Locked Failed
Remaining All Unlocked Failed
Remaining Door Locked Failed
Remaining Door Unlocked Failed
Removing Element from Access Level Failed
Removing Floor from Access Level Failed
Restoring Roaming Window Failed
Restoring Sub-Window Failed
Resuming Camera Auto-Switch on Smart Wall Failed
Resuming Camera Auto-Switch on Smart Wall Failed
Resuming Play on Smart Wall Failed
Searching History Access Events Failed
Searching Video Failed
Setting Attendance Parameters for Access Control Device Failed
Setting Decoding Output Resolution Failed
Setting Floor's Access Forbidden Schedule Failed
Setting Floor's Free Access Schedule Failed
Setting Time for Calculating Attendance Data Automatically Failed
Slow Forward Playback on Smart Wall Failed
Sorting Views for Smart Wall Failed
Start Clipping in Playback Failed
Start Preview Record Failed
Starting Auto-Switch of Smart Wall Views Failed
Starting Camera Auto-Switch on Smart Wall Failed
Starting Elevator Live View Failed
Starting Elevator Playback Failed
Starting Live View Failed

Starting Live View of Door Failed
Starting Live View of Signal Source on Smart Wall Failed
Starting Live View on Smart Wall Failed
Starting Wipers Failed
Stopping All Live Videos on Smart Wall Failed
Stopping Auto-Switch of Smart Wall Views Failed
Stopping Elevator Live View Failed
Stopping Elevator Playback Failed
Stopping Live View of Door Failed
Stopping Live View of Single Source on Smart Wall Failed
Stopping Live View on Smart Wall Failed
Stopping Playback of Door Failed
Stopping Playback on Smart Wall Failed
Stopping Wipers Failed
Switching Live View on Smart Wall via Network Keyboard Failed
Switching Stream for Smart Wall Failed
Switching Stream in Live View Failed
Switching Stream in Live View Failed
Switching View for Smart Wall Failed
Switching View via Network Keyboard Failed
Synchronizing Floor Name from Device to System Failed
Synchronizing Floor Name from System to Device Failed
Transcoding Playback Failed
Two-way Audio in Live View Failed
Unlinking Decoding Output with Smart Wall Failed
Unlocking Door Failed
Unlocking Failed
User Login Failed
Viewing Live View of Next Camera on Smart Wall Failed
Viewing Live View of Previous Camera on Smart Wall Failed
Visitor Check out Manually
Window Division Failed

5.1.2 Warning Logs

The Warning Log shall be searchable by the following subcategories

License Expired

5.1.3 Information Logs

The Information Log shall be searchable by the following subcategories

Access Forbidden
Access Forbidden Schedule
Access With Credential

Acknowledge Alarm
Activate Access Control Device
Activate Device
Activate Elevator Control Device
Activate License
Activate Online Device
Activate Recording Server
Activating Elevator Control Device Failed
Add Attendance Check Point
Add Attendance Group
Add Camera Element
Add Access control Device
Add Access Group(Basic Information)
Add Access Level (Basic Information)
Add Access Level in Access Group
Add Access Schedule Template
Add Alarm Category
Add Alarm Input Element
Add Alarm Output Element
Add Alarm Priority
Add Alarm Settings
Add Anti-Passback Rule
Add Application Data Server
Add Area
Add Arming Schedule Template
Add Card to Person
Add Dashboard
Add Decoding Device
Add DeepinMind Server
Add Defense Schedule Template
Add Device Upgrade Schedule
Add Dock Station
Add Dock Station Group
Add Door
Add Door to Access Level
Add Door to Anti-Passback Rule
Add Element to Access Level
Add Elevator Control Device
Add Elevator Resource
Add Elevator's Related Camera
Add Email Template
Add Encoding Device
Add Entry & Exit Counting Rule
Add Event Settings
Add Evidence
Add Face Comparison Group

Add Facial Recognition Server
Add Fingerprint to Person
Add Fuzzy Matching Rule
Add Generic Event
Add Holiday
Add Hot Region
Add Hot Region on GIS Map
Add Hot Spare for NVR
Add Hot Spot
Add Hot Spot on GIS Map
Add Icon
Add Label on GIS Map
Add Leave Application in a Batch
Add Linked Holiday for Shift Schedule
Add Location for GIS Resource Group
Add Location for Resource Group
Add Major Leave Type
Add Map
Add Map Label
Add Member to Dock Station
Add Minor Leave Type
Add Multi-Door Interlocking Rule
Add N+1 Hot Spare
Add Partition
Add Pathway
Add Permission Schedule
Add Person
Add Person Additional Information
Add Person Group
Add Person in Attendance Group
Add Person Profile
Add Person to Access Group
Add Person to Face Comparison Group
Add Radar Element
Add Recording Schedule
Add Recording Server
Add Recording Template
Add Related Camera to Access point
Add Remote Site
Add Report
Add Resource Group for Alarm
Add Resource Group for Heat Analysis
Add Resource Group for Pathway Analysis
Add Resource Group for People Counting
Add Resource Group for Person Features
Add Role

Add Security Audit Server
Add Security Control Device
Add Shift Schedule
Add Site to GIS Map
Add Smart Wall
Add Streaming Server
Add txt Template for Attendance Report
Add User
Add User-Defined Event
Add UVSS
Add Vehicle
Add Vehicle List
Add Video Copy-back Schedule for Dock Station
Add Video Tag
Add View
Add View Group
Add View Schedule
Add Visitor
Add Visitors in a Batch
Adding Elevator Resource Failed
Adding Elevator's Related Camera Failed
Adjust Screen Brightness
Adjust Screen Contrast
Adjust Screen Definition
Adjust Screen Saturation
Adjust View Sequence
Alarm Arming
Alarm Disarming
Alarm Input Bypass Recovered
Alarm Input Bypassed
Apply Access Control Applications
Apply Face Comparison Group to Device and Link Camera
Apply Hot Spare Settings to NVR
Apply Leave for One Person
Arming/Disarming in Live View
Assign Access Level to Access Group
Assign Door to Access Level
Assign Floor to Access Level
Assign Shift Schedule to Attendance Group
Auto-Switch of Live View on Smart Wall: Next Camera
Auto-Switch of Live View on Smart Wall: Previous Camera
Back Up Captured Pictures
Back Up Database in Schedule
Back Up Database Now
Back Up Recorded Video Files
Back Up Vehicle Records

Batch Correct Attendance Record
Batch Delete Persons
Batch Display Live View on Smart Wall
Batch Edit Time Zone for Access Control Devices
Batch Edit Time Zone for Elevator Control Devices
Batch Edit Time Zone for Encoding Devices
Batch Edit Time Zone for Security Control Panels
Batch Editing Time Zone for Access Control Devices Failed
Batch Editing Time Zone for Elevator Control Devices Failed
Batch Editing Time Zone for Encoding Devices Failed
Batch Editing Time Zone for Security Control Panels Failed
Batch Enable Face Credential
Batch Import Domain Group Persons
Batch Import Domain Persons
Batch Import Person Information
Batch Issue Cards to Persons
Broadcast
Call Answered
Call Processed
Cancel Face Comparison Group Linkage with Camera
Cancel Linkage between Access Level and Access Group
Cancel Linkage between Domain Group and Access Group
Cancel Linkage between Domain Group and Attendance Group
Cancel Linkage between Domain Group and Face Comparison Group
Capture Picture in Live View
Capture Picture in Playback
Card Issuing Settings
Change Device Password
Change User Password
Checking Frequency
Clear Alarm Info
Collect Face by Device
Configure Multiple Authentication
Correct Attendance Records in a Batch
Correct Check-in/out
Create Roaming Window
Customize Additional Information
Database Recovery
Deactivate User
Delete Access Control Device
Delete Access Group
Delete Access Level
Delete Access Schedule Template
Delete Alarm Category
Delete Alarm Input Element
Delete Alarm Output Element

Delete Alarm Priority
Delete Alarm Settings
Delete All Shift Schedules
Delete Anti-Passback Rule
Delete Application Data Server
Delete Area
Delete Arming Schedule Template
Delete Attendance Check Point
Delete Attendance Group
Delete Attendance Handling Records in a Batch
Delete Camera Element
Delete Customized Additional Information
Delete Dashboard
Delete Decoding Device
Delete DeepinMind Server
Delete Defense Schedule Template
Delete Device Upgrade Schedule
Delete Dock Station
Delete Dock Station Group
Delete Door
Delete Elevator Control Device
Delete Elevator Resource
Delete Email Template
Delete Encoding Device
Delete Entry & Exit Counting Rule
Delete Event Settings
Delete Evidence
Delete Face Comparison Group
Delete Facial Recognition Server
Delete Files from FTP
Delete Fuzzy Matching Rule
Delete Generic Event
Delete Holiday
Delete Hot Region
Delete Hot Spare for NVR
Delete Hot Spot
Delete Icon
Delete Linkage Configuration for Access Control Device
Delete Linked Holiday for Shift Schedule
Delete Location for GIS Resource Group
Delete Location for Resource Group
Delete Major Leave Type
Delete Map
Delete Map Label
Delete Member from Dock Station Group
Delete Minor Leave Type

Delete Multi-Door Interlocking Rule
Delete N+1 Hot Spare
Delete Partition
Delete Pathway
Delete Permission Schedule Template
Delete Person
Delete Person Additional Information
Delete Person Group in a Batch
Delete Person's Card
Delete Person's Fingerprint
Delete Radar Element
Delete Recording Schedule
Delete Recording Server
Delete Recording Template
Delete Remote Site
Delete Report
Delete Resource Group for Alarm
Delete Resource Group for Heat Analysis
Delete Resource Group for Pathway Analysis
Delete Resource Group for People Counting
Delete Resource Group for People Features
Delete Roaming Window
Delete Role
Delete Security Audit Server
Delete Security Control Device
Delete Shift Schedule
Delete Smart Wall
Delete Streaming Server
Delete txt Template for Attendance Report
Delete User
Delete User-Defined Event
Delete UVSS
Delete Vehicle
Delete Vehicle List
Delete Video Copy-Back Schedule for Dock Station
Delete Video Tag
Delete View
Delete View Group
Delete View Schedule
Delete Visitor
Delete Visitors in a Batch
Deleting Elevator Resource Failed
Digital View in Live View
Digital View in Playback
Disable Face Credentials
Disable VCA Display

Disarm All Partition of Security Control Panel
Disarm Partition
Disarm Radar
Display Alarm on Smart Wall
Display Auto-Switch in One Window
Display Auto-Switch in Tile Mode
Display on Top Layer
Display Real-Time Person Number
Door Control: Close Door
Door Control: Open Door
Door Control: Remain Locked
Door Control: Remain Unlocked
Download Alarm Details
Download Alarm Details
Download Events
Download Files from FTP
Download QR Code
Edit Access Control Device
Edit Access Control Device working mode
Edit Access Group (Basic Information)
Edit Access Level (Basic Information)
Edit Access Level in Access Group
Edit Access Schedule Template
Edit Alarm Category
Edit Alarm Input Element
Edit Alarm Output Element
Edit Alarm Priority
Edit Alarm Settings
Edit Anti-Passback Rule
Edit Application Data Server
Edit Area
Edit Arming Schedule Template
Edit Attendance Group
Edit Attendance Group’s Assigned Shift Schedule
Edit Attendance Point
Edit Attendance Report Display
Edit Auto-Switch of Live View on Smart Wall
Edit Backup Information
Edit Basic Information of Dock Station Group
Edit Camera Capabilities
Edit Camera Element
Edit Camera's Virtual Tracking
Edit Configuration of DeepinMind Server
Edit Configuration of Third-Party Database
Edit Contact Information
Edit Customized Additional Information

Edit Customized Additional Information
Edit Dashboard
Edit Decoding Device
Edit DeepinMind Server
Edit Defense Schedule Template
Edit Device Access Mode
Edit Dock Station
Edit Door
Edit Door in Access Level
Edit Door Related Camera
Edit Element in Access Level
Edit Elevator Control Device
Edit Elevator Resource
Edit Elevator's Related Camera
Edit Email Settings
Edit Email Template
Edit Entry & Exit Counting Rule
Edit Event Settings
Edit Evidence
Edit Face Comparison Group (Basic Information)
Edit Facial Recognition Server
Edit Files on FTP
Edit First Day of Week
Edit Fuzzy Matching Rule
Edit General Rule
Edit Generic Event
Edit Holiday
Edit Hot Region
Edit Hot Region on GIS Map
Edit Hot Spare for NVR
Edit Hot Spare Settings
Edit Hot Spot
Edit Hot Spot on GIS Map
Edit Label on GIS Map
Edit Linked Holiday for Shift Schedule
Edit Location for GIS Resource Group
Edit Location for Resource Group
Edit Logo of Attendance Report
Edit Major Leave Type
Edit Map
Edit Map Label
Edit Minor Leave Type
Edit Multi-Door Interlocking Rule
Edit N+1 Hot Spare
Edit Network Performance
Edit NTP Settings

Edit Online Devices Network Parameters
Edit OpenAPI Settings
Edit Operation Recommendation
Edit Overtime
Edit Partition
Edit Pathway
Edit Permission Schedule
Edit Person
Edit Person Additional Information
Edit Person Card
Edit Person Fingerprint
Edit Person Group
Edit Person in Access Group
Edit Person in Attendance Group
Edit Person Profile
Edit Person’s Login Password of Dock Station
Edit Person’s Login Password of Dock Station failed.
Edit Persons in Access Group by Group
Edit Persons in Attendance Group by Group
Edit Picture Storage
Edit Radar Element
Edit Recognized Plate Number
Edit Recording Schedule
Edit Recording Server
Edit Recording Template
Edit Registering to Central System Settings
Edit Relation between Person Group and Other Groups.
Edit Remote Site
Edit Report
Edit Resource Group for Alarm
Edit Resource Group for Heat Analysis
Edit Resource Group for Pathway Analysis
Edit Resource Group for People Counting
Edit Resource Group for People Features
Edit Retention Time of Data Recorded in System
Edit Role
Edit Secret Key for File Transmission
Edit Security Audit Server
Edit Security Audit Server's Linked Device
Edit Security Control Device
Edit Security Settings
Edit Server NIC Settings
Edit Service Status
Edit SFTP Settings
Edit Shift Schedule
Edit Shift Schedule's Assigned Attendance Group

Edit Site on GIS Map
Edit Smart Wall
Edit Streaming Server
Edit System Properties
Edit Temperature Unit
Edit Transfer Protocol to HTTPS
Edit txt Template for Attendance Report
Edit URL of GIS Map API
Edit User
Edit UVSS
Edit Vehicle List
Edit Vehicle’s Marking Status
Edit Video Copy-Back Schedule for Dock Station
Edit Video Tag
Edit View
Edit View Group
Edit View Schedule
Edit Visitor
Edit WAN Access Settings
Editing Elevator Resource Failed
Editing Elevator's Related Camera Failed
Email Test
Enable VCA Display
Enable Video Function Management Service
Enable/Disable Alarm
Enable/Disable Receiving Generic Event
Enlarge Roaming Window
Enlarge Sub Window
Enter VCA Search from Live View
Enter VCA Search from Playback
Exit: Close Barrier
Exit: Open Barrier
Exit: Remain Barrier Closed
Exit: Remain Barrier Open
Export Access Records
Export Attendance Records
Export Event/Alarm Logs
Export Heat Analysis Report of Resource Group
Export Heat Map
Export Heat Values of Heat Map
Export Logs
Export Matrix Data of Heat Analysis
Export Pathway Analysis Report
Export People Counting Report
Export People Counting Report of Resource Group
Export Person Feature Report

Export Person Feature Report of Resource Group
Export Person Information
Export Queue Report of Camera
Export Temperature Report
Export Vehicle Information
Export Vehicle Reports
Fast Forward Playback on Smart Wall
Fisheye Expansion in Live View
Fisheye Expansion in Playback
Force Logout
Forgive Anti-Passback
Free Access
Get Camera Name
Get Camera's Recording Schedule
Get Card Swiping Records from Device
Get Heat Analysis Report of Resource Group
Get Heat Values of Heat Map
Get Hot Spare Settings from NVR
Get License Exception
Get Matrix Data of Heat Map
Get Pathway Analysis Report
Get People Counting Report
Get People Counting Report of Resource Group
Get Person Feature Report
Get Person Feature Report of Resource Group
Get Persons from Device
Get Queue Report from Camera
Get Temperature Report
Get Vehicle Report
Import Face Comparison Groups from Device
Import Vehicle Information
Input Person Additional Information
Instant Playback
Link Decoding Output
Link Dock Station Group with Dock Station
Link Domain Group with Access Group
Link Domain Group with Attendance Group
Link Domain Group with Face Comparison Group
Link Person's Additional Information with Person Information in Domain
Linkage Configuration for Access Control Device
Lock
Lock All Doors
Lock Video in Playback
Log Search
Manage Persons in Face Comparison Group by Group
Manual Update Resource

Manually Apply Access Levels
Manually Calculate Attendance
Manually Close Alarm Window
Manually Display Alarm's Related Camera's Video on Smart Wall
Manually Display Alarm's Related View on Smart Wall
Manually Stop Maintenance
Manually Synchronize Person in Domain or Domain Group
Mark Alarm
Mifare Encryption
Modify AD Configure
Modify Vehicle
Move Roaming Window
Move View
Network Keyboard Login
Network Keyboard Logout
Network Keyboard: Display Live View on Smart Wall
Network Keyboard: Get Live View Parameters
Network Keyboard: Switch Live View on Smart Wall
Network Keyboard: Switch View
Network Keyboard: Window Division
One-Touch Configuration
Partition: Away Arming
Partition: Delayed Arming
Partition: Instant Arming
Pause Playback on Smart Wall
Pause Area Auto-Switch
Pause Auto-Switch in Custom View
Pause Auto-Switch of Live View on Smart Wall
Pause Single-Screen Auto-Switch
Play in the Specific Window on Control Client
Play in the Specific Window on Smart Wall
PTZ Control
PTZ in Live View
PTZ: Batch Disable Wipers
PTZ: Batch Enable Wipers
Push Subscription
Reboot Access Control Device
Reboot Elevator Control Device
Rebooting Elevator Control Device Failed
Record Fingerprint from Device
Recover All
Recover All Doors
Recover Arming
Refresh Decoding Device
Refresh Security Audit Server
Remain All Locked

Remain All Unlocked
Remove Door from Access Level
Remove Door from Anti-Passback
Remove Element from Access Level
Remove Floor from Access Level
Remove Hot Region from GIS Map
Remove Hot Spot from GIS Map
Remove Label from GIS Map
Remove Multi-Doors from One Multi-Door Interlocking Rule
Remove One Door from Multiple Multi-Door Interlocking Rules
Remove Person from Access Group
Remove Person from Attendance Group
Remove Person from Face Comparison Group
Remove Related Camera for Door
Remove Shift Schedule from Attendance Group
Remove Site from GIS Map
Reset Area Auto-Switch
Reset Network Information
Reset Online Device Password
Reset User Password
Restore All Settings
Restore All Settings of Elevator Control Device
Restore Default of Elevator Control Device
Restore Default Settings
Restore Roaming Window
Restore Sub Window
Restore User
Restore User Password
Restoring All Settings of Elevator Control Device Failed
Restoring Default of Elevator Control Device Failed
Resume Area Auto-switch
Resume Auto-switch in Custom View
Resume Auto-switch of Live View on Smart Wall
Resume Playback on Smart Wall
Resume Single-Screen Auto-Switch
Search Access Records
Search Alarm Log
Search Event Log
Search Evidence
Search Files on FTP
Search Heat Map
Search Vehicle Passing Records
Search Vehicle Records
Search Video Tag
Send Report Rule
Send to Spare Server

Set Access Control Device Parameters
Set Access Forbidden Schedule
Set Attendance Parameters for Access Control Device
Set Card Reader Access Mode
Set Card Reader Parameters
Set Custom Wiegand
Set Decoding Output Resolution
Set Door Parameters
Set Elevator Parameters
Set Floor's Free Access Schedule
Set Free Access Schedule
Set Mifare Card Encryption for Elevator Control Device
Set Network Parameters
Set Opening Door with First Card Parameters
Set Parameters for Elevator Control Device
Set Person’s Access Group
Set Person’s Login Password of Dock Station
Set Person’s Login Password of Dock Station failed.
Set Time for Auto-Apply Access Levels
Set Time for Auto-Calculating Attendance
Set Time Parameters
Set Time Parameters for Elevator Control Device
Setting Elevator Parameters Failed
Setting Mifare Card Encryption for Elevator Control Device Failed
Setting Parameters for Elevator Control Device Failed
Setting Time Parameters for Elevator Control Device Failed
Slow Forward Playback on Smart Wall
Start Area Auto-switch
Start Auto-switch in Custom View
Start Auto-switch of Live View on Smart Wall
Start Downloading Video Files
Start Elevator Live View
Start Elevator Playback
Start Live View
Start Live View of Door Related Camera
Start Live View of Local Signal Source on Smart Wall
Start Live View of Radar
Start Live View on Smart Wall
Start Playback
Start Playback of Radar
Start Playback on Smart Wall
Start Recording in Live View
Start Remote Playback Recording
Start Single-Screen Auto-Switch
Start Two-Way Audio
Start View Auto-switch

Stop All Live View on Smart Wall
Stop Area Auto-switch
Stop Auto-switch in Custom View
Stop Auto-switch of Live View on Smart Wall
Stop Downloading Video File
Stop Elevator Live View
Stop Elevator Playback
Stop Live View
Stop Live View of Door Related Camera
Stop Live View of Local Signal Source on Smart Wall
Stop Live View of Radar
Stop Playback
Stop Playback of Door Related Camera
Stop Playback of Radar
Stop Playback on Smart Wall
Stop Recording in Live View
Stop Recording in Playback
Stop Single-Screen Auto-Switch
Stop Two-Way Audio
Stop View Auto-Switch
Subscribe Access Control Event
Switch Application Data Server
Switch Stream in Live View
Switch View
Sync Device’s Recording Settings to Device
Sync Floor Name from Device to System
Sync Floor Name from System to Device
Synchronize Camera Name
Synchronize Domain Users
Synchronize Door Name
Synchronize Partition
SYS Stopped
System Settings on Control Client
Temporary Access
Test Alarm Configuration
Test Event Rule
Transcoding Playback
Trigger User-Defined Event
Turn off Alarm Output
Turn off Screen
Turn on Alarm Output
Turn on Screen
Two-Way Audio in Live View
Deactivate License
Unlink Decoding Output
Unlink Dock Station Group with Dock Station

Unlink Person's Additional Information with Person Information in Domain
Unlock
Unlock Video during Playback
Upgrade Device
Upload File to FTP
User Login
User Logout
Video Search
View Captured Picture
View Details in Live View
View Details in Playback
Visitor Check out Manually
Window Division

5.2 Device Logs

Log information on Encoding Device and Security Control Device are searchable by major type and corresponding minor types:

5.2.1 Encoding Device Logs -Alarm

The Alarm Log shall be searchable by the following subcategories

Alarm Input	Alarm Output	Answering Question Detection Started	Answering Question Detection Stopped
Audio Exception Detection	Audio Loss Detection	Audio Loss Detection Started	Audio Loss Detection Stopped
Defocus Detection Started	Defocus Detection Stopped	Digital Channel Alarm Input Started	Digital Channel Alarm Input Stopped
Emergency Alarm Started	Emergency Alarm Stopped	Face Detection Alarm Started	Face Detection Alarm Stopped
Face Detection Started	Face Detection Stopped	Fast Moving Detection Started	Fast Moving Detection Stopped
Fire and Smoke Detection Ended	Fire and Smoke Detection Started	Intrusion Detection Started	Intrusion Detection Stopped
ITS Alarm Started	ITS Alarm Stopped	Lecture Detection Alarm Started	Lecture Detection Alarm Stopped
License Plate Recognition Started	License Plate Recognition Stopped	Line Crossing Detection Started	Line Crossing Detection Stopped
Loitering Detection Alarm Started	Loitering Detection Alarm Stopped	Motion Detection Alarm Started	Motion Detection Alarm Stopped
Network Camera External Alarm	Object Removal Detection Alarm Started	Object Removal Detection Alarm Stopped	Parking Detection Alarm Started
Parking Detection Alarm Stopped	People Gathering Alarm Started	People Gathering Alarm Sopped	PIR Alarm started
PIR Alarm stopped	POS Started	POS Stopped	Region Entrance

			Detection Started
Region Entrance Detection Stopped	Region Exiting Detection Alarm Started	Region Exiting Detection Alarm Stopped	Scene Change Detection Alarm Started
Scene Change Detection Alarm Stopped	Scene Detection Alarm	Ship Detection	Sudden Change of Sound Intensity Started
Sudden Change of Sound Intensity Stopped	Sudden Decrease of Sound Intensity Detection	Temperature Difference Alarm Started	Temperature Difference Alarm Stopped
Temperature Measurement Alarm Started	Temperature Measurement Alarm Ended	Temperature Measurement Pre-Alarm Started	Temperature Measurement Pre-Alarm Ended
Unattended Baggage Detection Alarm Started	Unattended Baggage Detection Alarm Stopped	Vandal-proof Detection Started	Vandal-proof Detection Ended
VCA Alarm Started	VCA Alarm Stopped	Video Tampering Alarm Started	Video Tampering Alarm Stopped
VQD Alarm Started	VQD Alarm Stopped	Wireless Alarm Started	Wireless Alarm Ended
Other			

5.2.2 Encoding Device Logs - Exception

The Exception Log shall be searchable by the following subcategories

Accessory Board Exception	ANR Recording Failed	Backup Device Exception	Buffer Overflow
Camera/Recording Resolution Mismatch	Capture Error	Cloud Storage Data Uploading Exception	Dial Exception
DSP Exception	Ezviz Offline Exception	Face Detection Stopped	Fan Exception
HDD Error	HDD Exception	HDD Full	Illegal Login
IP Address Conflicted	IPC Module Reboot Abnormally	Memory Card Damaged	Memory Card Defective
MODEM Offline	Network Camera Disconnected	Network Disconnected	Overheating Protection
POE Power Exception	Rear Panel Temperature Exception	Recording Error	Scene Exception
Starting MAS of Network Camera Failed	Sub-system IP Address Conflict	Sub-system Network Disconnected	Synchronizing Network Camera Password Exception
Temperature Exception	Video Input Error	Video Signal Loss	Video Standard Mismatch
Other			

5.2.3 Encoding Device Logs -Operation

The Operation Log shall be searchable by the following subcategories

Add Plan	Add Scene	Add Signal Source	Adjust Volume

Bring Video Wall Window to Back	Bring Video Wall Window to Front	Cancel Master Screen of Video Wall	Cancel Slave Screen of Video Wall
Control Decoding Channel Ratio	Control Digital Zoom	Control Online by Dialing	Control Online/Offline by Short Message
Control Passive Decoding	Control Plan	Control Remote Playback	Cut Background Picture
Cut Video Source	Delete Plan	Delete Scene	Delete Signal Source
Display Logo	Display Operation	Download Background Picture	Edit Input
Edit Output	Edit Signal Source	Edit Virtual LED	Get All Valid Windows
Get Auto-Switch Plan	Get Current Used Scene	Get Decoder Auto-Switch Settings	Get Decoding Board Parameters
Get Decoding Channel Information	Get Decoding Channel Status	Get Decoding Channel Switch	Get Device Information
Get Display Channel Settings	Get Input Signal List	Get Plan List	Get Scene
Get Scene List	Get Signal Window Information	Get Status of Remote Playback	Get User Configuration
Get Video Wall Connection	Get Video Wall Scene	Get Virtual LED	Hide Logo
Illegal Shutdown	Local: Activate Device	Local: Add Network Camera	Local: Add Network HDD
Local: Add Working Device	Local: Auto-Restore	Local: Backup End Time	Local: Backup Record File(s)
Local: Configuration	Local: Configure PIN	Local: Configure SIP Server	Local: Create Array
Local: Create Logical Disk	Local: Delete Array	Local: Delete HDD	Local: Delete Logical Disk
Local: Delete Network Camera	Local: Delete Network HDD	Local: Delete Working Device	Local: Device Type Configuration
Local: Disable Wireless Dial-up	Local: Expand Logical Disk	Local: Expand Blacklist & Whitelist	Local: Export Configuration File
Local: Export Heat Map File	Local: Export Heat Map Flow	Local: Export IPC Configuration File	Local: Export Picture Files
Local: Format HDD	Local: HDD Detect	Local: Hot Spare Device Configuration	Local: Hot Standby
Local: Import Blacklist & Whitelist	Local: Import Configuration File	Local: Import IPC Configuration File	Local: Live View
Local: Lock Video Files	Local: Logout	Local: Manual Clear or Trigger Alarm	Local: Manual Rebuild Array
Local: Move Array	Local: N+1 Configuration	Local: One-touch Configuration	Local: Operate Tag
Local: Output Switch	Local: Playback By File	Local: Playback By Time	Local: PTZ Control
Local: Reboot	Local: Reset Admin's Password	Local: Restore Logical Disk	Local: Restore to Factory Settings
Local: Resume Default Admin	Local: Search Message	Local: Send Message	Local: Set Dial-up Parameters

Password			
Local: Set Dial-up Plan	Local: Set Network HDD	Local: Set RAID Speed	Local: Set Whitelist
Local: Setting Network Camera	Local: Start Backup	Local: Start Burning	Local: Start Capture
Local: Start Recording	Local: Stop Backup	Local: Stop Capture	Local: Stop Recording
Local: Switch Output	Local: Time Settings	Local: Unlock Video Files	Local: Upgrade
Local: Upgrade IPC	Local: Upgrade RAID	Local: View Message	MVC: Login Code Splitter
MVC: Logout Code Splitter	Platform Operation	Power On	Reboot Intelligent Library
Receive Message	Reconnect Passive Decoder	Remote: Activate Device	Remote: Add NAS Disk
Remote: Add Storage Pool	Remote: Add Working Device	Remote: Alarm Output Triggering	Remote: Arm
Remote: Auto Restore	Remote: Close Transparent Channel	Remote: Configure Parameters	Remote: Configure PIN
Remote: Configure SIP Server	Remote: Create Array	Remote: Create Logical Disk	Remote: Delete Array
Remote: Delete Logical Disk	Remote: Delete NAS Disk	Remote: Delete Pictures	Remote: Delete Storage Pool
Remote: Delete Video File	Remote: Delete Working Device	Remote: Device Type Configuration	Remote: Disable Cloud System
Remote: Disarm	Remote: Edit Storage Pool Capacity	Remote: Edit Storage Pool Parameters	Remote: Enable Cloud System
Remote: Enable Manual Dial-up	Remote: Establish Transparent Channel	Remote: Expand Logical Disk	Remote: Export Blacklist & Whitelist
Remote: Export Configuration File	Remote: Export IPC configuration	Remote: Export Picture Files	Remote: Export Video Files
Remote: Format HDD	Remote: Get Parameters	Remote: Get Status	Remote: Hot Spare Device Configuration
Remote: Hot Standby	Remote: Import Blacklist & Whitelist	Remote: Import Configuration File	Remote: Import IPC Configuration File
Remote: IPC Addition	Remote: IPC Deletion	Remote: IPC Setting	Remote: Lock File
Remote: Login	Remote: Logout	Remote: Manual Rebuild Array	Remote: Move Array
Remote: N+1 Configuration	Remote: One-Touch Configuration	Remote: Operate Tag	Remote: Playback by File
Remote: Playback by Time	Remote: PTZ Control	Remote: Reboot	Remote: Reset admin's Password
Remote: Restore Default Parameters	Remote: Restore Logical Disk	Remote: Restore to Factory Settings	Remote: Search Message
Remote: Send Message	Remote: Set Dial-up Parameters	Remote: Set Dial-up Plan	Remote: Set NAS Speed
Remote: Set RAID Speed	Remote: Set Whitelist	Remote: Shutdown	Remote: Start Capture
Remote: Start Recording	Remote: Start Two-way Audio	Remote: Stop Capture	Remote: Stop Recording

Remote: Stop Two-way Audio	Remote: Unlock File	Remote: Upgrade	Remote: Upgrade IPC
Remote: Upgrade RAID	Remote: View Message	Restore Initial Status	Scene Control
Screen Control	Send Alarm Message	Send Auto-Switch Plan	Set Background Picture
Set Decoder Auto-Switch Settings	Set Decoding Board Parameters	Set Decoding Channel Switch	Set Decoding Delay Level
Set Display Channel	Set External Matrix	Set Master Screen of Video Wall	Set OSD
Set Output Resolution	Set Remote Playback	Set Single Scene	Set Slave Screen of Video Wall
Set Transparency	Set Two-way Audio Record	Set User Configuration	Set User Password
Set Video Wall Connection	Set Video Wall Scene	Shutdown	Start Auto-Switch Decoding
Start Dynamic Decoding	Start Passive Decoding	Start PPPoE Connection	Stop Auto-Switch Decoding
Stop Dynamic Decoding	Stop Passive Decoding	Stop PPPoE Connection	Stream Compression Configuration
Switch Scene	Upload Background Picture	Upload Logo	VCA Configuration
Video Wall Display Area Setup	Window Control	Other	

5.2.4 Encoding Device Logs - Information

The Information Log shall be searchable by the following subcategories

Accessory Board Information	Add ANR Duration	ANR Record Started	ANR Record Stopped
Backing Up Work Device Started	Backing Up Work Device Ended	Backing Up Device Information	Buffer Status Log
Call Log	Connect to Network Camera	Delete ANR Duration	Delete Expired Picture
Delete Expired Video Files	Dial-up Status	Ezviz Running Status	Global Error Information
HDD Error Detailed Information	HDD Information	Login Server	Login Server Again
Logout Server	Network Camera Disconnected	Network HDD Information	Platform Information
POE power Exception	RAID Information	Recording Synchronization Completed	Recording Synchronization Exception
Recording Synchronization Started	Recording Synchronization Stopped	S.M.A.R.T Information	Server Status Information
Start Capture	Start Recording	Stop Capture	Stop Recording

Unlocking Log	Zone Alarm	Other	

5.2.5 Access Control Device Logs - Alarm

Capture Linkage Alarm
Card Reader Tamper Restored
Card Reader Tampered
Device Tamper Restored
Device Tampered
Duress Alarm
Event Input Alarm
Event Input Restored
Fire Input Open Circuit Alarm
Fire Input Restored
Fire Input Short Circuit Alarm
Lane Controller Fire Input Alarm
Lane Controller Fire Input Restored
Lane Controller Tamper Restored
Lane Controller Tampered
Low Face Quality
Low Fingerprint Quality
Max. Card Authentication Times
No Memory Alarm
No Memory for Offline Event Storage
POS Disabled
POS Enabled
SD Card Full Alarm
Secure Door Control Unit Tamper Restored
Secure Door Control Unit Tampered
Smart Door Lock Duress Alarm
Zone Alarm Restored
Zone Exception Alarm
Zone Open Circuit Alarm
Zone Short Circuit Alarm
Other

5.2.6 Access Control Device Logs-Exception

Active Infrared Intrusion Detector Exception
Active Infrared Intrusion Detector Recovered
AC Power Disconnected
Alternating Current Restored
Battery Voltage Recovered (for Facial Recognition Device)
Battery Voltage Recovered
Camera Connected
Camera Disconnected
Card Reader Offline
Card Reader Online

CAN Bus Exception
CAN Bus Restored
Communication with Anti-Passback Server Disconnected
Communication with Anti-Passback Server Restored
Communication with IR Adaptor Exception
Communication with IR Adaptor Restored
Communication with Light Board Exception
Communication with Light Board Restored
COM Port Connected
COM Port Disconnected
Device Does Not Authorized
Device Offline
Device Online
Distributed Access Controller Network Disconnected
Distributed Access Controller Network Restored
Distributed Access Controller Offline
Distributed Access Controller Online
Fingerprint Module Connected
Fingerprint Module Disconnected
Flash Writing/Reading Exception
High Pedestal Temperature
ID Card Reader Connected
ID Card Reader Disconnected
Indicator Restored
Indicator Off
Lane Controller Offline
Lane Controller Online
Local Login: Lock
Local Login: Unlock
Low Battery Voltage (for Facial Recognition Device)
Low Battery Voltage
Master Controller RS-485 Loop Circuit Node Connection Recovered
Master Controller RS-485 Loop Circuit Node Disconnected
Motor Sensor Exception
Network Disconnected
Network Recovered
Power Off
Power On
Recording Error
Reset Watchdog
RS-485 Connection Exception
RS-485 Connection Restored
Secure Door Control Unit Offline
Secure Door Control Unit Online
Other

5.2.7 Decoding Device Logs - Exception

Enabling DSP Failed
Smart Rule Not Supported
Other

5.2.8 Decoding Device Logs - Operation

Add Division
Add Plan
Add Signal Source
Backplane Temperature Exception
Control Division
Control Plan
Delete Division
Delete Plan
Delete Signal Source
Digital Zoom
Download Background Picture
Edit Division
Edit Input Source
Edit Logo
Edit Output Channel
Edit Plan
Edit Signal Source
Edit Virtual LED
Fan Exception
Get All Valid Windows
Get Currently Used Scene
Get Decoding Board Parameters
Get Device Information
Get Display Unit Connection Settings
Get Division List
Get List of Input Signal Sources
Get List of Plans
Get Matrix Settings
Get One Window Information
Get User Settings
Get Video Wall Scene
Get Virtual LED
Get Window Division
Hide Logo
IP Address Conflicted
Live View Operation
Network Disconnected
Recover to Initial Status
Screen Control
Set Background Picture

Set Decoding Board Parameters
Set Decoding Output Latency Level
Set Display Area on Display Unit
Set Display Unit Connection
Set Division of Background Picture
Set Layer Transparency
Set Matrix
Set OSD
Set Resolution of Display Output
Set User
Set User Password
Set Video Wall Scene
Set Window Division
Set Window Division of Video Source
Show Logo
Sub-board Disconnected with Network
Sub-board Exception Started
Sub-board IP Address Conflicted
Sub-board Plugged In
Sub-board Unplugged
Switch Scene
Temperature Exception
Upload Background Picture
Window Control
Other

5.2.9 Security Control Device Logs - Alarm

The Alarm Log shall be searchable by the following subcategories

Alarm Reset	Alarm Restored	Business Consulting	Business Consulting Over
Detector Restored	Detector Tampered	Device Restored	Device Tampered
Dust Detector Alarm	Dust Detector Alarm Restored	Electricity Meter Alarm	Electricity Meter Alarm Restored
Environment Acquisition Device Alarm	Environment Acquisition Device Alarm Restored	Gas Detection Alarm	Gas Detection Alarm Restored
Incorrect Password Attempts	Invalid Card ID	Keypad Restored	Keypad Tampered
Motion Detection Alarm Started	Motion Detection Alarm Stopped	Open-Circuit Alarm	Panic Alarm
Panic Alarm Restored	Panic Button Pressed Down	Panic Button Restored	Power Supply On/Off Alarm
Power Supply On/Off Alarm Restored	Sensor Higher than Threshold 1	Sensor Higher than Threshold 2	Sensor Higher than Threshold 3
Sensor Higher than	Sensor Lower than	Sensor Lower than	Sensor Lower than

Threshold 4	Threshold 1	Threshold 2	Threshold 3
Sensor Lower than Threshold 4	Short-Circuit Alarm	Temperature-Humidity Sensor Alarm	Temperature-Humidity Sensor Alarm Restored
Transformer Temperature Alarm	Transformer Temperature Alarm Restored	UPS Alarm	UPS Alarm Restored
Video Tampering Alarm Started	Video Tampering Alarm Stopped	Virtual Zone Burglary Alarm	Virtual Zone Fire Alarm
Virtual Zone Panic Alarm	Water Level Sensor Alarm	Water Level Sensor Alarm Restored	Zone Module Restored
Zone Module Tampered	Other		

5.2.10 Security Control Device Logs - Exception

The Exception Log shall be searchable by the following subcategories

3G Communication Exception	3G Communication Restored	AC Power Down	AC Power On
Analog Sensor Fault	Analog Sensor Recovery	Battery Voltage Recovery	Detector Battery Low
Detector Battery OK	Detector Online	GPRS Communication Exception	GPRS Communication Restored
GPRS Module Error	HDD Error	HDD Full	Illegal Access
IP Address Conflicted	KBUS Module Connected	KBUS Module Disconnected	Low Battery Voltage
MCU Rebooted	MODEM Offline	Network Camera Disconnected	Network Camera IP Address Conflicted
Network Connected	Network Disconnected	Network Flow Exceeded	Normal RF Signal
Normal Wired Network	Power Down	Power On	Printer Error
Printer Recovered	Recording Error	Remote: Formatting HDD Failed	RF Signal Exception
RS-485 Channel Connected	RS-485 Channel Disconnected	RTC Real-time Clock Exception	SIM Card Exception
SIM Card Restored	Sub-board Communication Error	Telephone Connected	Telephone Disconnected
Telephone Module Error	Trigger Module Connected	Trigger Module Disconnected	USB Communication Error
USB Communication Recovered	Video Input Exception	Video Signal Loss	Video Standard Mismatch
WDT Reset	Well Connected Wi-Fi	Wi-Fi Communication Fault	Wired Network Exception
XBUS Module Connected	XBUS Module Disconnected	Zone Module Connected	Zone Module Disconnected
Other			

5.2.11 Security Control Device Logs – Operation

The Operation Log shall be searchable by the following subcategories

Add Administrator	Add Back-End Operator	Add Detector to Zone	Add Front-End Operator
Add Keyfob User	Add Keyfob/Card Reader User	Audio Off	Audio On
Auto Arming	Auto Disarming	Bypass	Bypass Recovered
Capture Settings	Card Arming/Disarming	Card Settings	Change Administrator's Password
Change Back-End Operator's Password	Change Front-End Operator's Password	Check Detector Battery	Check Detector Signal
Clear Alarms	Close Door	Control Trigger	DDNS Settings
Delete Administrator	Delete Back-End Operator	Delete Detector from Zone	Delete Front-End Operator
Delete Keyfob User	Delete Keyfob/Card Reader User	Detector Arming	Detector Disarming
Disable Function Key	Disable Siren	Duress	Edit 3G Parameters
Edit Access Control Parameters	Edit Dialing Settings	Edit Event Trigger Action Settings	Edit GPRS Parameters
Edit Network Uploading Parameters	Edit Partition System Parameters	Edit Print Parameters	Edit RS-485 Settings
Edit Security Control Panel Settings	Edit Sensor Settings	Edit System Fault Settings	Edit Trigger Settings
Edit Uploading Mode Settings	Edit Zone Settings	Enable Function Key	Enable Siren
Expanded Network Center Settings	Format SD Card	Group Bypass	Group Bypass Recovered
HiDDNS Settings	Instant Arming	Key Arming/Disarming Zone Arming	Key Arming/Disarming Zone Disarming
Local: Activate Device	Local: Lock	Local: Reboot	Local: Restore to Factory Settings
Local: Unlock	Local: Upgrade	Mobile Phone Alarm Clearing	Mobile Phone Arming
Mobile Phone Disarming	Mobile Phone Instant Arming	Mobile Phone Stay Arming	Network Card Settings
Network Module Settings	Normal Arming	Normal Disarming	One-Touch Away Arming
One-Touch Stay Arming	Open Door	Re-register External Module	Remote Arming
Remote Disarming	Remote Keypad Upgrade	Remote: Activate Device	Remote: Export Configuration File
Remote: Export Video Files	Remote: Format HDD	Remote: Import Configuration File	Remote: Lock
Remote: Lock File	Remote: Playback by File	Remote: Playback by Time	Remote: PTZ Control
Remote: Reboot	Remote: Restore to	Remote: Start Recording	Remote: Stop Recording

	Factory Settings		
Remote: Turn Off Alarm Lamp	Remote: Turn On Alarm Lamp	Remote: Unlock	Remote: Unlock File
Remote: Upgrade	Remote: Upgrade Keypad	Remote: Upgrade Network Module	Remote: Upgrade Zone Module
Remote: User Login	Remote: User Logout	Restore Default Settings	RS-485 Bus Re-registration
RS-485 Bus Settings	Scheduled Arming/Disarming Parameters	Scheduled Enable/Disable Trigger Settings	Search External Module
Single Zone Arming	Single Zone Arming/Disarming	Single Zone Disarming	Start Broadcast
Start Passthrough	Start Two-Way Audio	Start Arming	Stop Broadcast
Stop Passthrough	Stop Two-Way Audio	Swipe Patrol Card	Temporary Password Operation
Trigger Off	Trigger On	Turn Off Keypad Alarm Sound	Upgrade Sub-board
Whitelist Settings	Wi-Fi Settings	Zone Tamper-proof Settings	Other

5.2.12 Security Control Device Logs – Event

The Event Log shall be searchable by the following subcategories

Activating Trigger Failed	Auto Arming	Auto Arming Failed	Auto Disarming
Auto Disarming Failed	B Code Time Synchronization	Deactivating Trigger Failed	Disable Trigger by Schedule
Enable Trigger by Schedule	Forced Arming	Insert USB	Keypad Locked
Pull Out USB	Scheduled Synchronization	SDK Time Synchronization	Sub-board Plug In
Sub-board Pull Out	Other		