A&E System Specification

HikCentral Professional

ALL TRADEMARKS ARE THE PROPERTIES OF THEIR RESPECTIVE OWNERS

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
<table>
<thead>
<tr>
<th>No.</th>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>11.</td>
<td>DSCP</td>
<td>Differentiated Services Code Point</td>
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<td>12.</td>
<td>DVR</td>
<td>Digital Video Recorder</td>
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<td>13.</td>
<td>FPS</td>
<td>frames per second</td>
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<td>14.</td>
<td>FTP</td>
<td>File Transfer Protocol</td>
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<td>15.</td>
<td>GIS</td>
<td>Geographic Information System</td>
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<td>16.</td>
<td>GUI</td>
<td>Graphical User Interface</td>
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<td>17.</td>
<td>HLC</td>
<td>High Light Compression</td>
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<td>18.</td>
<td>HTTP</td>
<td>Hypertext Transfer Protocol</td>
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<td>19.</td>
<td>HTTPS</td>
<td>Secure HTTP</td>
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<td>20.</td>
<td>Hybrid SAN</td>
<td>Hybrid Storage Area Network</td>
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<td>21.</td>
<td>ICMP</td>
<td>Internet Control Message Protocol</td>
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<td>22.</td>
<td>IGMP</td>
<td>Internet Group Management Protocol</td>
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<td>23.</td>
<td>IP</td>
<td>Internet Protocol</td>
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<td>24.</td>
<td>JPEG</td>
<td>Joint Photographic Experts Group</td>
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<td>25.</td>
<td>LPR</td>
<td>License Plate Recognition</td>
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<td>26.</td>
<td>MicroSD</td>
<td>Removable Miniaturized Secure</td>
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<td>27.</td>
<td>MicroSD</td>
<td>Removable Miniaturized Secure Digital Flash Memory Card</td>
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<td>28.</td>
<td>MPEG</td>
<td>Moving Pictures Experts Group</td>
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<td>29.</td>
<td>MWB</td>
<td>Manual White Balance</td>
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<td>30.</td>
<td>NAS</td>
<td>Network Attached Storage</td>
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<td>31.</td>
<td>NIC</td>
<td>Network Interface Controller</td>
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<td>32.</td>
<td>NTP</td>
<td>Network Time Protocol over Ethernet</td>
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<td>33.</td>
<td>NVR</td>
<td>Network Video Recorder</td>
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<td>34.</td>
<td>PIR</td>
<td>Passive Infrared Sensor</td>
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<td>35.</td>
<td>PoE</td>
<td>Power over Ethernet</td>
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<td>36.</td>
<td>POS</td>
<td>Point of Sale</td>
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<td>37.</td>
<td>PPPoE</td>
<td>Point-to-Point Protocol over Ethernet</td>
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<td>38.</td>
<td>PTZ</td>
<td>Pan Tilt Zoom</td>
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<td>39.</td>
<td>QoS</td>
<td>Quality of Service</td>
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<td>40.</td>
<td>ROI</td>
<td>Region of Interest</td>
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<td>41.</td>
<td>RSM</td>
<td>Remote Site Management</td>
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<td>42.</td>
<td>RTP</td>
<td>Real-Time Transport Protocol</td>
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<td>43.</td>
<td>RTSP</td>
<td>Real-Time Streaming Protocol</td>
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<td>44.</td>
<td>SD Card</td>
<td>Secure Digital Flash Memory Card</td>
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<td>45.</td>
<td>SMTP</td>
<td>Simple Mail Transfer Protocol</td>
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<td>46.</td>
<td>TCP</td>
<td>Transmission Control Protocol</td>
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<td>47.</td>
<td>UDP</td>
<td>User Datagram Protocol</td>
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<td>48.</td>
<td>UPnP</td>
<td>Universal Plug and Play</td>
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<td>49.</td>
<td>UVSS</td>
<td>Under Vehicle Surveillance System</td>
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<td>50.</td>
<td>VCA</td>
<td>Video Content Analysis</td>
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<td>51.</td>
<td>VMS</td>
<td>Video Management System</td>
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<td>52.</td>
<td>WB</td>
<td>White Balance</td>
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<td>53.</td>
<td>WDR</td>
<td>Wide Dynamic Range</td>
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<td>54.</td>
<td>SYS</td>
<td>System Management Service</td>
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<td>55.</td>
<td>ADS</td>
<td>Application Data Service</td>
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1.3 Certifications, Standards and Ratings

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

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, 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
i. 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.

2.3.1 Web Client

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

B. Shall remotely connect to the SYS server via TCP/IP and perform the following functions:
   1. Manage encoding devices.
a. Add encoding devices to the system by Hikvision Private Protocol via the following discovery options:
   - IP/Domain
   - Hik-Connect
     - Add devices added to Hik-Connect service to the system
     - Hik-Connect Device List
   - IP Segment
   - Port Segment
   - Batch Import
   - Verify stream encryption key
b. Add encoding devices to the system by Hikvision EHome Protocol via the following discovery options:
   - Device ID
   - Device ID Segment
   - Batch Import
   - Key
c. Add encoding devices to the system by ONVIF Protocol via the following discovery options:
   - IP/Domain
   - IP Segment
   - Port Segment
   - Batch Import
d. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
e. Add camera to area
f. Apply time zone settings to the device
g. Select Streaming Server for the area
h. Select video storage location for the camera
i. Get device’s local recording settings
j. View the following detailed information of the added devices:
   - Alias
   - Address
   - Serial number
   - Available cameras
   - Alarm I/O
   - Network status
   - Password strength
k. Refresh the status of the added devices
l. Set remote configuration of the added devices
m. Change password of the added devices (in batch)
n. Edit bandwidth for video downloading
o. Activate the online devices (in batch)
p. Set N+1 hot spare for device

2. Manage access control devices
a. Add access control device to the system by Hikvision Private Protocol via the following discovery options:
   - IP Address
   - IP Segment
• Batch Import
b. Add access control device to the system by Hikvision EHome Protocol via the following discovery options:
  • Device ID
  • Device ID Segment
  • Batch Import
c. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
d. Add doors to area
e. Apply time zone settings to the device
f. Synchronize name
g. Set configuration of the added devices
  • Time settings for the device
  • Turnstile parameters
  • Reboot the device
  • Restore default
  • Custom Wiegand
  • Linkage
  • Card swiping parameters
  • More remote configuration parameters
h. Refresh the status of the added devices
i. Reset device password (in batch)
j. Activate the online devices
k. 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

3. Manage elevator control devices
a. Add elevator control device to the system by Hikvision Private Protocol via the following discovery options:
  • IP Address
  • IP Segment
  • Batch Import
b. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
c. Add floors to area
d. Apply time zone settings to the device
e. Synchronize name
f. Set configuration of the added devices
  • Time settings for the device
  • Reboot the device
  • Restore default
  • More remote configuration parameters
g. Refresh the status of the added devices
h. Reset device password (in batch)
i. Activate the online devices
4. Manage security control devices
   a. Add security control device to the system by Hikvision Private Protocol via the following discovery options:
      - IP Address
      - Hik-Connect
        - Add devices added to Hik-Connect service to the system and the devices will automatically register to the EZIVZ account
        - Hik-Connect Device List
      - IP Segment
      - Port Segment
      - Batch Import
   b. Add security control device to the system by Hikvision EHome Protocol via the following discovery options:
      - Device ID
      - Device ID Segment
      - Batch Import
   c. Add online devices in the same local subnet with the Local Network/Server Network using Search Active Device Protocol (SADP)
   d. Add alarm inputs and other channels to area
   e. Apply time zone settings to the device
   f. Set remote configuration of the added security control devices
   g. Refresh the status of the added devices
   h. Reset device password (in batch)
   i. Activate the online devices
5. Manage dock station devices
   a. Add devices to the system via the following discovery options:
      - IP Address/domain
      - IPSegment
      - Port Segment
      - Batch Import
   b. Apply time zone settings to the device
   c. Add to dock station group
6. Upgrade device firmware via Web Client or EZVIZ Cloud Service
   a. Simultaneous upgrade
   b. Set upgrade schedule
7. Restore/reset device password
8. Manage application data service
   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
9. Manage Recording Server
   a. Add pStor, Network Video Recorder (only for picture storage), Cloud Storage Server and Hybrid SAN as Recording Server
   b. Import service component certificate to pStor, and Cloud Storage Server
   c. View storage information for the Recording Server, including used space and free space
   d. Enable picture storage function of pStor, Hybrid Storage Area Network and Cloud Storage Server
   e. Custom video copy-back to copy back recorded videos from Hybrid SAN’s managed device automatically and set start time and end time
   f. Set video expiration duration for Hybrid SAN
   g. View channel information configured to store video files in Recording Server:
      - Camera name
      - Area
      - IP address
      - Storage type
      - Recording schedule
      - Recording status
      - Network status
   h. 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. Add Streaming Server via IP address (in LAN or WAN), and import service component certificate to Streaming Server

11. Manage DeepinMind Server
   a. Add facial recognition server
      - Enable WAN access
      - Add cameras to facial recognition server
   b. Add behavior analysis server
      - Enable WAN access
      - Add cameras to behavior analysis server for analysis tasks

12. Manage Security Audit Server
   - Add security audit server by IP address
   - Enable WAN access
   - Link encoding devices with security audit server for audit

13. When adding NVRs and network cameras, devices shall have the option to automatically create logical areas by device name or add to an existing area

14. When adding NVRs and network cameras, shall have the option to automatically
   a. Synchronize logical camera name assigned at device level
   b. Automatically add device’s recording schedule
      - Shall be able to set and modify NVR recording schedules
   c. When adding an NVR, user can check the online and offline status of NVR channels

15. Once added, show the online/offline status of devices in both physical view and logical view

16. Remotely configure NVRs and network cameras and set all functions that are available

17. Online device detection function is available on the Web Client accessed via Internet Explorer, Google Chrome and Firefox, and the active online access control devices in the same local subnet with the Web Client/ SYS Server will be displayed on a list

18. Enable WAN access for the Recording Server
19. Display channels in the same area in alphabetical order
20. Synchronize NVR channel names with the names displayed on the Web Client
21. Support the following functions of smart wall:
   a. Shall add up to 32 smart walls and display multiple smart walls
   b. Shall add up to 32 decoding devices and video wall controllers
   c. Shall delete, edit, and view the added walls
   d. 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
   e. Shall activate and refresh decoding devices
   f. Shall edit the device’s network location as LAN IP address, or WAN IP address
   g. Shall support the linkage between decoding device’s or video wall controller’s decoding outputs and smart wall windows
   h. Shall set the decoding output of the decoder as the signal input of video wall controller
   i. Shall set role permission of smart walls, decoding devices, and windows
   j. 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 card
   k. Shall support smart wall database backup and restoration via hot spare

C. Remote Site Management (RSM): Manages multiple SYSs, shall have the ability to:
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. Display Remote Sites in alphabetical order
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. Display site address, site port, alias, user name, system IDs, GPS location, and version information
17. Configure GIS location of Remote Sites
18. View the Remote Site’s GIS location, hot spot, and hot region settings in Map module
   a. Set scheduled database backup
   b. Set maximum number of backup
c. View the database saving path in Central System

20. View the resource changes on the Remote Site
   a. Newly added cameras
   b. Deleted cameras
   c. Name changed cameras
   d. Synchronize the resources in the Central System with the Remote Site
   e. Remove the deleted cameras from the Central System in batch

21. RSM function shall be supported by the Central System activated by the license that takes this function

D. Logical View: Area management, shall have the ability to:
   1. Create up to 3,000 areas with 5 levels per SYS, and up to 100,000 areas for remote site management
   2. Add up to 256 cameras, access points, alarm inputs, alarm outputs, and UVSS respectively to one area and 10,000 by distributed deployment in total per SYS
   3. Configure the camera remotely
   4. Check detailed information of cameras, including
      a. Name
      b. Address
      c. Encoding device alias
      d. Network status (for video channels only)
      e. Recording schedule status (for video channels only)
      f. Area Name
      g. Manufacturer
      h. Added to map or not
   5. Check detailed information of doors, including
      a. Name
      b. Address
      c. Access control device address
      d. Network status
      e. Door status
      f. Access level
      g. Area
      h. Added to map or not
   6. Check detailed information of elevators, including
      i. Name
      j. Address
      k. Elevator control device address
      l. Network status
      m. Area
      n. Added to map or not
   7. Check detailed information of alarm inputs/outputs, including
      a. Name
      b. Device/Site
      c. Partition (only for alarm input)
      d. Area
      e. Added to map or not
8. Check detailed information of UVSS, including
   a. Name
   b. Address
   c. Network Status
   d. Area
   e. Added to map or not

9. Synchronize camera name, moving the camera to other area, and displaying elements of sub-areas, remote configuration on device, copying the current camera’s specified configuration parameters to other cameras for batch configuration

10. Synchronize door/floor name, and displaying elements of sub-areas, copying the current access point’s specified parameters to other access points

11. Synchronize/apply door/floor name

12. Add alarm inputs/outputs, move the inputs/outputs to other area, and display elements of sub-areas

13. Move the UVSS to other area, and display elements of sub-areas

14. Set resource groups in areas, including:
   a. Alarm groups
   b. People analysis groups
   c. Heat analysis groups
   d. Pathway analysis groups
   e. Person feature analysis groups
   f. Multi-door interlocking groups
   g. Anti-passback groups
   h. Security control partitions

15. Locate resource groups on map, including:
   a. Alarm groups
   b. People analysis groups
   c. Heat analysis groups
   d. Pathway analysis groups
   e. Multi-door interlocking groups
   g. Anti-passback groups
   h. Security control partitions

16. Switch and select the added sites, display channels of Remote Sites in logical view, and switch to logical view of the selected site when the RSM module is enabled

17. Import cameras in logical view after channel updates of Remote Sites

18. Remind users of deletion and displaying offline devices after deleting channels on Remote Sites

19. Import areas of added cameras on Remote Sites into the Central System

20. Copy configuration information of stream type, protocol type, main storage, and auxiliary storage to other channels

21. Select security control device’s zones as alarm inputs to add into the area

22. Set defense schedule for the arming mode in different time periods for the partitions of the added security control devices

23. Edit the following basic information, recording settings, event settings, and map settings of the cameras:
   a. Shall have the ability to edit the following basic information of cameras for current and Remote Site:
      • Camera name
      • Protocol type
      • Check the live view and instant playback of the camera in the same screen
- Configure recording for the camera
- Configure the camera remotely

b. Shall have the ability to set visual tracking by associating the camera with other cameras nearby and create on-video overlays.

c. Shall have the ability to configure camera recording settings for current and Remote Site:
   - Set main storage and auxiliary storage for cameras
   - Synchronize recording settings to device
   - Get recording settings from device
   - Select storage location asEncoding Device, Hybrid Storage Area Network, pStor, Cloud Storage Server for cameras of current site
   - Select storage location as pStor, Hybrid Storage Area Network or Cloud Storage Server of central system for cameras of Remote Site
   - Set recording schedule template
   - Select stream type as main stream or sub-stream
   - Set pre-record and post-record for recording the video
   - 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
   - Select a Streaming Server to get the video stream of the camera
   - 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
   - Add new Recording Server
d. Shall have the ability to set picture storage settings for cameras
   - Set storage location as system management server
   - Set storage location as Hybrid SAN
   - Set storage location as Cloud Storage Server
   - Set storage location as a pStor
   - Set storage location as an NVR
e. Shall have the ability to set face comparison settings
   - Link the camera to facial recognition server
   - Apply certain face comparison group to the camera
f. Shall set the camera as an attendance check point
g. Shall have the ability to configure event settings for cameras of current site:
   - Select the triggering event
   - Trigger user-defined event
h. 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

i. 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 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

24. 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
      • 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
    - Card
    - Fingerprint
    - Card and Fingerprint
    - Card or Fingerprint
    - Card and PIN
    - PIN and Fingerprint
    - Card, PIN, and Fingerprint
    - Face or Fingerprint or Card
    - Face and Fingerprint
    - Face and PIN
    - Face and Card
    - Face
    - Face, Fingerprint, and Card
    - Face, PIN, and Fingerprint
    - Employee ID and PIN
    - Employee ID and Fingerprint
    - Employee ID, Fingerprint, and PIN
    - Employee ID and Face
  - Enable custom card reader access mode
    - Set custom time period and 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
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:
     - Arming schedule template
     - Trigger recording
     - Create tag
     - Capture picture
     - Link access point
     - Link alarm output
     - Trigger PTZ
     - Send email
     - Trigger user-defined event

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

25. 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
           - Card
           - Fingerprint
- Card and Fingerprint
- Card or Fingerprint
- Card and PIN
- PIN and Fingerprint
- Card, PIN, and Fingerprint
  - Enable custom card reader access mode
  - Set custom time period and 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:
  - Arming schedule template
  - Trigger recording
  - Create tag
  - Capture picture
  - Link access point
  - Link alarm output
  - Trigger PTZ
  - Send email
  - Trigger user-defined event

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

26. Shall edit the following settings of alarm inputs for current site:
- Edit alarm input name
- Edit the event settings of the camera
- Trigger user-defined event
- Add the alarm input to map
- Edit map icons

27. Shall edit the following settings of alarm outputs for current site:
- Edit the alarm output name
- Add the alarm output to map
- Edit map icons

28. Shall edit the following settings of UVSS for current site:
   a. Edit basic information of the UVSS
      - IP address
      - Port number
      - Alias
      - User name
      - Password
   b. Edit additional settings of the UVSS
      - Link camera(s) to the UVSS
   c. Edit map settings of the UVSS
      - Add the UVSS to map
• Edit the map icons

E. Event & Alarm: Shall have the ability to configure the following:
   1. To avoid flooding operators with alarms, shall have the option of adding just an event from a
device, that will be searchable via the Control Client, but not broadcast as an alarm,
including System-Monitored Events:
   a. Shall batch add the following events from cameras:
      • Abnormal Face
      • Absence Detection
      • Audio Exception Detection
      • Camera Communication Exception
      • Camera Communication Recovered
      • Camera Offline
      • Camera Online
      • Camera Recording Exception
      • Camera Recording Recovered
      • Channel Armed
      • Channel Arming Failed
      • Climbing Detection
      • Defocus Detection
      • Driving on the Lane Line
      • Face Capture
      • Face Detection
      • Falling Down
      • Fast Moving (Detection)
      • Fire Source Detection
      • Frequently Appeared Person
      • Getting Up Detection
      • Illegal Lane Change
      • Illegal Parking
      • Illegal U-Turn
      • In-Toilet Overtime Detection
      • Installing Scanner
      • Intrusion (Detection)
      • Key Person Getting Up Detection
      • Line Crossing (Detection)
      • Loitering (Detection)
      • Motion Detection
      • Motor Vehicle on Non-Motor Vehicle Lane
      • Multiple Faces
      • Object Removal (Detection)
      • Operation Timeout
      • Parking (Detection)
      • People Density
      • People Gathering (Detection)
      • People Queuing-Up Alarm
- PIR
- Playground Overstay Detection
- Region Entrance (Detection)
- Region Exiting (Detection)
- Reserve Entering Alarm
- Scene Change Detection
- Sitting Detection
- Sleep on Duty Detection
- Standing Up Detection
- Sticking Scrip
- Sudden Change of Sound Intensity Detection
- Sudden Decrease of Sound Intensity Detection
- Sudden Increase of Sound Intensity Detection
- Tailing
- Temperature Alarm
- Temperature Difference Alarm
- Temperature Pre-Alarm
- Unattended Baggage (Detection)
- Using Mobile Phone
- Vehicle Blacklist Alarm
- Vehicle Whitelist Alarm
- Video Loss
- Video Tampering Detection
- Violent Motion
- Physical Conflict
- Waiting Time Detection Alarm
- Wearing Sunglasses
- Wrong-Way Driving

b. Shall batch add the following Door Events
   - 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 Fingerprint
     - Access Granted by Fingerprint and PIN
     - Combined Authentication Passed
• Duress Alarm

• Abnormal Card Swiping
  o Access Denied (Door Remained Locked or Inactive)
  o Access Denied (First Card Not Authorized)
  o Access Denied (NFC Card Reading Disabled)
  o Access Denied by Card and Fingerprint
  o Access Denied by Card and PIN
  o Access Denied by Card, Fingerprint, and PIN
  o Access Denied by Employee ID and Fingerprint
  o Access Denied by Employee ID and PIN
  o Access Denied by Employee ID, Fingerprint, and PIN
  o Access Denied by Employee ID and Face
  o Access Denied by Face
  o Access Denied by Face and Card
  o Access Denied by Face and Fingerprint
  o Access Denied by Face and PIN
  o Access Denied by Face, Card, and Fingerprint
  o Access Denied by Face, PIN, and Fingerprint
  o Access Denied by Fingerprint
  o Access Denied by Fingerprint and PIN
  o Access Denied by Invalid M1 Card
  o Access Timed Out by Card and Fingerprint
  o Access Timed Out by Card and Password
  o Access Timed Out by Card, Fingerprint, and PIN
  o Access Timed Out by Employee ID and Fingerprint
  o Access Timed Out by Employee ID and PIN
  o Access Timed Out by Employee ID, Fingerprint, and PIN
  o Access Timed Out by Employee ID and Face
  o Access Timed Out by Face and Card
  o Access Timed Out by Face and Fingerprint
  o Access Timed Out by Face and PIN
  o Access Timed Out by Face, Card, and Fingerprint
  o Access Timed Out by Face, PIN, and Fingerprint
  o Access Timed Out by Fingerprint and PIN
  o Anti-Passback Server Respond Failed
  o Anti-Passback Violation
  o Card Not in Multi-Factor Authentication Duration
  o Card Not in Multi-Factor Authentication Group
  o Card Number Expired
  o Combined Authentication Timed Out
  o CPU Card Reading Disabled
  o EM Card Reading Disabled
  o Face Recognition Failed
  o Fingerprint Not Found
  o Invalid Time Period
  o Live Face Detection Failed
  o M1 Card Reading Disabled
  o Max. Card Access Failed Attempts
o Multi-Door Interlocking
o No Access Level Assigned
o No Card Number Found
o Verifying Card Encryption Information Failed

• Other Door Event
  o Access Failed When Free Passing
  o Barrier Obstructed
  o Barrier Obstruction Recovered
  o Calling Surveillance Center
  o Card Reader Tamper Alarm
  o Climbing Over Barrier
  o Door Abnormally Open (Door Contact)
  o Door Bell Rang
  o Door Button Pressed Down
  o Door Button Released
  o Door Closed (Door Contact)
  o Door Locked (Door Lock)
  o Door Locked by Keyfob
  o Door Open (Door Contact)
  o Door Open Timed Out (Door Contact)
  o Door Open with First Card Ended
  o Door Open with First Card Started
  o Door Remained Unlocked by Keyfob
  o Door Unlocked (Door Lock)
  o Door Unlocked by Keyfob
  o Face Recognition Terminal Offline
  o Face Recognition Terminal Online
  o First Card Authorization Ended
  o First Card Authorization Started
  o Force Accessing
  o Intrusion
  o Multi-Factor Authentication Timed Out
  o Multi-Factor Authentication: Access Denied by Remote Client
  o Multi-Factor Authentication: Access Denied by Super Password
  o Multi-Factor Authentication: Access Granted
  o Multi-Factor Authentication: Remotely Open Door
  o Multi-Factor Authentication: Repeated Authentication
  o Multi-Factor Authentication: Super Password Access Granted
  o Passing Timeout
  o Remaining Locked Status Ended
  o Remaining Locked Status Started
  o Remaining Unlocked Status Ended
  o Remaining Unlocked Status Started
  o Remote: Locked Door
  o Remote: Remained Locked (Credential Failed)
  o Remote: Remained Unlocked (Free Access)
  o Remote: Unlocked Door
  o Reverse Passing
c. Shall batch add Elevator Events
   • Normal Card Swiping
     o Access Granted by Card
     o Access Granted by Card and Fingerprint
     o Access Granted by Card and PIN
     o Access Granted by Card, Fingerprint, and PIN
     o Access Granted by Fingerprint
     o Access Granted by Fingerprint and PIN
     o Access Granted by Fingerprint and PIN
     o Duress Alarm
   • Abnormal Card Swiping
     o Access Denied (NFC Card Reading Disabled)
     o Access Denied by Card and PIN
     o Access Denied by Card, Fingerprint, and PIN
     o Access Denied by Encrypted CPU Card
     o Access Denied by Fingerprint
     o Access Denied by Fingerprint and PIN
     o Access Denied by Invalid M1 Card
     o Access Denied in Sleep Mode
     o Access Timed Out by Card and PIN
     o Access Timed Out by Card, Fingerprint, and PIN
     o Access Timed Out by Fingerprint and PIN
     o Anti-Passback Server Respond Failed
     o Card Number Expired
     o CPU Card Reading Disabled
     o EM Card Reading Disabled
     o Invalid Time Period
     o Live Face Detection Failed
     o M1 Card Reading Disabled
     o Max. Card Access Failed Attempts
     o No Access Level Assigned
     o No Card Number Found
     o Verifying Card Encryption Information Failed
   • Other Door Event
     o Auto Button Relay Connected
     o Auto Button Relay Disconnected
     o Button Relay Connected
     o Button Relay Disconnected
     o Card Reader Tamper Alarm
     o Door Open with First Card Ended
     o Door Open with First Card Started
     o Remaining Locked Status Ended
     o Remaining Locked Status Started
     o Remaining Unlocked Status Ended
     o Remaining Unlocked Status Started
     o Remote: Locked Door
     o Remote: Remained Locked (Credential Failed)
Remote: Remained Unlocked (Free Access)
Remote: Unlocked Door

- Shall batch add Radar Events
  - Auto-Arming
  - Auto-Arming Failed
  - Auto-Disarming
  - Auto-Disarming Failed
  - Disarming
  - Instant Arming
  - Line Crossing
  - Region Entrance

- Shall batch add Alarm Input events

- Shall batch add the following ANPR Event
  - License Plate Matched Event
  - License Plate Mismatched Event

- Shall batch add the following Person Event:
  - Face Matched Event
  - Face Mismatched Event

- Shall batch add the following Under Vehicle Surveillance System Event:
  - Offline
  - Online

- Shall batch add Remote Site Event: Site Offline

- 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 Full
  - HDD High Temperature
  - HDD Impact Detection
  - HDD Severe Failure
  - Illegal Login
  - R/W HDD Failure
  - Video Standard Mismatch

- Shall batch add health monitoring events from Access Control Device:
  - Active Infrared Intrusion Detector Exception
  - AC Power Off
  - AC Power On
  - Battery Voltage Recovered
  - 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 Tampered
• Disconnected with Anti-Passback Server
• Lane Controller Fire Input Alarm
• Lane Controller Tamper Alarm
• Low Battery Voltage
• Low Storage Battery Voltage
• Motor or Sensor Exception
• No Memory for Offline Event Storage
• Pedestal Temperature Too High

I. Shall batch add health monitoring events from Elevator Control Device:
• Device Armed
• Device Arming Failed
• Device Tampered
• Distributed Elevator Controller Offline
• Distributed Elevator Controller Online
• Elevator Controller Offline
• Elevator Controller Online
• No Memory for Offline Event Storage

m. Shall batch add health monitoring events from Security Control Device:
• AC Power Down
• Alarm Cleared
• Auto Arming Failed
• Away Arming
• 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

n. Shall batch add health monitoring events from Dock Station
• Dock Station Offline
• Dock Station Online

o. Shall batch add health monitoring events from Decoding Device
• Decoding Device Offline
• Decoding Device Online

p. Shall add events for Resource Groups
• Person Amount More/Less than Threshold

q. 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

r. Shall batch add health monitoring events from the Streaming Server: Server Exception
s. Shall batch add health monitoring events from the DeepinMind Server
- DeepinMind Server Offline
- DeepinMind Server Online
t. Shall add events for Security Audit Server
- Critical Event
- Normal Event
- Serious Event
u. Shall batch add Health Monitoring events from the HikCentral Professional Server:
- CPU Exception
- CPU Recovered
- CPU Warning
- RAM Exception
- RAM Recovered
- RAM Warning
- System Service Abnormally Stopped
- System Service Recovered to Run
v. Shall batch add user events: User Login/Logout
w. Shall batch add User-Defined Event as System-Monitoring Event
x. Shall batch add Generic Event as System-Monitoring Event
y. 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
z. Shall batch delete all invalid events
aa. Shall trigger any of the above stated events as user-defined events
bb. Shall convert any of the above stated events into an alarm
cc. Shall enable active control for events and set threshold for reactivation
dd. For Person Amount More/Less than Threshold event of resource groups, shall set the threshold
ee. Shall set the following linkage actions of System-Monitored Event:
   • Set and view Arming 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
   • Create tag for related videos
   • Capture picture from the source camera or specified camera, and set the capture time
   • Lock video files
   • 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 output
   • Close alarm output manually or automatically
   • Trigger PTZ
   • Send email and set the added email template. For alarm input events, attach with entry & exit counting report
   • Trigger user-defined event

2. Generic Event: 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
   a. Shall have the ability to edit the event name
   b. Shall have the ability to support ‘copy from’ functions
   c. Shall have the ability to select transport type as TCP/UDP
   d. Shall have the ability to set the match type as Search/Match
   e. Shall have the ability to set the expression

3. User-Defined Event: Shall have the ability to set user-defined events

4. Alarms: shall support the following functions:
   a. Shall have the ability to configure the same events list as alarm in System-Monitored Events Part
   b. Same list of events listed above in section “1,2,3” shall be available to be programmed as alarms on the SYS
      i. When selecting a triggering event to program as alarms, only events supported by a device will appear in the Web Client
      ii. Alarm priority shall be configured to one of three levels by default:
         • High
         • Medium
         • Low
      iii. Alarm Priority of up to 255 levels can be added as required
      iv. 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)
v. Shall set arming schedule template as schedule template or event-based
vi. Shall enable active control and set threshold for reactivation
vii. Shall specify a user defined event or alarm input as the start or end event of the arming schedule
viii. Shall set alarm recipients from users accounts set up in the SYS
ix. Shall associate the source camera or up to 16 other cameras recording with alarm events
x. Shall lock associated alarm event video footage, so it is not auto-erased based on the camera schedule
xi. Shall set pre-record and post-record duration
xii. Shall display the recorded video when alarm occurred or live view by default
xiii. Shall associate a map with an alarm
xiv. Shall trigger a pop-up window with an alarm event
xv. 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
xvi. Shall enable restrict alarm handling time and select up to 16 user-defined events and alarm outputs to trigger events if timeout occurs
xvii. Shall trigger audible warning
xviii. Shall trigger User-Defined Event
c. Shall delete invalid items (in batch)
d. Shall enable/disable alarms (in batch)
e. 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, display on smart wall, email linkage, and user-defined event linkage
f. Alarm source, trigger events, and alarm priority can also be displayed
g. Shall support displaying alarms in alphabetical order
h. 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
i. 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
j. Shall support setting reports of events and alarms:
  • 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
  • Select report type as daily or weekly
  • Select the sending time
- Set the email template
- Select the format as Excel or PDF

k. Shall support testing alarm configuration: click the button and the system will trigger an alarm automatically

F. Access Level:
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

G. Time & Attendance
1. Shall have the ability to set the general rules
   a. Set weekends
   b. Define absence
      - If check in late for longer than the threshold, mark as absent
      - If check out earlier for longer than the threshold, mark as absent
      - If no check-in, mark as absent or late
      - If no check-out, mark as absent or early leave
   c. Set time point for attendance result auto-calculation
2. Shall define overtime
   a. Set work hour rate
   b. Define overtime in workdays
      - Enable/disable overtime on workdays
      - Set calculation mode as By Total Work Hours
         - Define valid overtime if overtime exceeds required work hours for certain minutes.
         - Set daily overtime level
      - Set calculation mode as By Total Work Hours or By Time Periods
         - Count early check-in as overtime
         - Count late check-out as overtime
3. Shall have the ability to set attendance check point
   a. Add the access point as attendance check point
   b. Add the facial recognition camera as attendance check point
   c. Attendance check point type includes: check-in & out, check-in only, check-out only

4. Shall have the ability to define leave
   a. Define major types of leaves
   b. Define minor types of leaves

5. Shall have the ability to add a new shift schedule
   a. Set a name for the schedule
   b. Copy the settings from other existing shift schedule
   c. Set repeat by week: the schedule will repeat every 7 days or two weeks based on the week
   d. Set repeat by day(s)
      • Set the frequency of repeat days
      • Set the start date for reference
   d. Set schedule type as Normal Shift: the required start-work time and end-work time is fixed
      • Set scheduled work time
      • Set minimum work hours
      • Set flexible mode as Allow Late/Early Leave and set allowable duration respectively
      • Set flexible mode as Flexible Period and set the flexible duration
      • Set break time calculation mode as Auto Deduct or Must Check, and set the break duration
      • Set the valid check-in/out period
   e. Set shift type as Man-Hour Shift: no required start-work time and end-work time, but the minimum work hours should be met
      • Set break time calculation mode as Auto Deduct or Must Check, and set the break duration
      • Set valid check-in/out period
      • Set minimum work hours
   f. Set access record calculation mode as First In & Last Out or Each Check-In/Out
   g. Enable Time and Attendance status on device so that the attendance status set on the attendance terminal is valid
   h. Add holidays to define the special days when the shift schedule is disabled
   i. Assign shift schedule to attendance group

6. Shall have the ability to view attendance record
   a. Filter the attendance records according to the following conditions:
• Time Period
• Time
• Attendance group
• Person name
• Status

b. View the attendance details and the person’s attendance report for one day
• Person name
• ID
• Date
• Attendance group
• Status
• Scheduled work time
• Required work hours
• Actual work time
• Late duration
• Early leave duration
• Break duration
• Leave duration
• Overtime 1 duration
• Overtime 2 duration
• Overtime 3 duration

c. View the attendance details and the person’s attendance report for more than one day
• Person name
• ID
• Attendance group
• Times of late and specific date
• Times of early leave and specific date
• Times of absent and specific date
• Times of late and early leave and specific date
• Times of normal and specific date
• Actual work hours
• Break duration
• Times of leave and specific date
• Total overtime duration

d. Get attendance records from managed devices

e. Calculate attendance again manually

f. Handle exceptional records
• correct check-in/out time
• Apply for leave
• Handle for one record or for multiple records in a batch

g. Export the filtered attendance records
• Set the format of the exported file
• Select the items for export
  o Person name
  o ID
  o Attendance group
o Attendance report, including times of late, early leave, absence, late and early leave, and normal
o Work information, including actual work hours and break duration
o **Total overtime**
  o leave duration
  - Export attendance details
h. View handling records
i. Search the history attendance result even if this person has been deleted from the system
j. When the device is online, upload the records to system of the device offline duration
k. Support different time zone of the device and HikCentral Professional platform

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

8. Set third-party database information to synchronize the attendance data in HikCentral to third-party database

**H. Person**

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
• Take a picture by webcam
• Upload a picture from local PC
f. Edit email address
g. Edit phone number
h. Edit remark
i. Customize additional information
   • Set optional information
   • Add additional information
j. Check the face comparison group, time and attendance group, access group and dock station group of the person
k. Configure effective period of access control and time & attendance for the access group
l. Enable the ‘Super User’ function to exempt this person from remaining locked (credentials failed) restrictions, all anti-passback rules, and first card authorization
m. Enable the ‘Extended Access’ function to open the access point for longer time for person with special requirements
n. 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
o. Set credential information for the person:
   i. PIN number
   ii. 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
   iii. 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
   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.
p. Add to Dock Station Group
   i. Set Login Password
   ii. Select the existing dock station group
   iii. Add new dock station group
q. View the details of the persons:
   iv. Name
   v. ID
   vi. Phone
   vii. Type
   viii. Face comparison group name
ix. Access group name
x. Attendance group name
xi. Effective period
xii. Credential information
   • Number of fingerprints
   • Number of cards
   • Enable/disable profile as Face Credentials
r. Batch issue cards to persons
   i. Set card issuing mode:
      • Card Enrollment Station
         o Card format
         o Reading frequency
         o Card encryption
         o Audio on/off
      • Card reader
         o Select card reader
   • Enter manually: enable/disable auto increment card number
s. Enable/disable face credentials
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
   • Add to person group
u. Synchronize domain persons
v. Export all persons information and set password for decompressing
w. Customizable additional information other than the basic information, such as address, income, etc.
x. Delete the selected persons
y. Delete all the persons
4. Face Comparison Group
   a. Add face comparison group
      i. Group name
      ii. Set similarity threshold
      iii. Add description
      iv. Add person(s) to the group
         • Add existing persons from person list or other face comparison groups
         • Add new persons
      v. Remove the person(s) from the face comparison group
   b. Edit the face comparison group and view the cameras that it is applied to
      i. Delete the face comparison group
ii. Delete all the face comparison groups  
c. Apply the face comparison group(s) to camera(s)  
5. Access Group  
a. Add access group  
i. Create a name for the access group  
ii. Link access group with person group so that the newly added person in the person group can be added to the access group automatically  
iii. Set person(s) in the access group  
   • Add existing persons from person list, other access groups, other attendance groups  
   • Add new persons  
iv. Set access level  
   • Select the existing access level and view the access point(s) and access schedule  
   • Add new access level  
b. View the details of the access group:  
   • Group name  
   • Person(s)  
   • Access level  
c. 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.  
d. Delete (all) the access group(s)  
e. Edit the access group  
f. Apply access groups to device  
i. Apply changes: Apply the person’s changed (newly added, edited, deleted) access levels to the device  
ii. 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  
g. 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  
6. Attendance Group  
a. Add attendance group  
i. Edit the attendance group name  
ii. Configure effective period for the group  
iii. Link attendance group with person group so that the newly added person in the person group can be added to the attendance group automatically  
iv. Add person to the group  
   • Add existing person from person list or other access group  
   • Add new person  
v. Set the shift schedule for the persons in the group  
   • Set shift type as fixed  
   • Set shift type as flexible  
   • Set holiday schedule  
vi. Set the time zone  
b. View the details of the added attendance group  
i. Group name  
ii. Shift schedule  
iii. Attendance shift schedule on every day
c. Edit the added attendance group
d. 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.
e. Delete (all) attendance group(s)

7. Dock Station Group
   a. Add dock station group
      i. Edit the dock station group name
      ii. Add person to the group
         • Add existing person from person list
         • Add new person
      iii. Set dock stations for the persons in the group. The videos stored in the persons’ body cameras can be uploaded to these dock stations
      iv. View the details of the added attendance group
      v. Group name
   b. Edit the added attendance group
   c. 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.
   d. Delete (all) dock station group(s)

I. Visitor
   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. ID type
      c. ID number
      d. Gender
      e. Profile
      f. Visitor group
      g. Email
      h. Phone number
      i. Company
      j. Visitee
      k. Visit reason
      l. Visit time
      m. Access group
   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
         i. Set issuing mode as card enrollment station or card reader
         ii. Set card format as normal or Wiegand
         iii. Audio on/off
iv. Set effective period for the card
v. Up to 5 cards for one person
c. Fingerprint
   i. Set issuing mode as USB Fingerprint Recorder or Fingerprint and Card Reader
   ii. Add a new fingerprint
   iii. Record up to 10 fingerprints for one person
   iv. 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

J. Vehicle
1. Import vehicle list
2. Import vehicle list 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, model, owner name (first name and last name) and phone number
9. Upload undercarriage picture to view both the current vehicle's captured undercarriage picture and the uploaded picture for comparison

K. Security
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 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. Elevator control device
f. Security control device
g. Dock station
h. Smart wall and screen
i. Servers
j. Face Comparison Group
k. Dock Station Group
l. Custom additional info.
m. User-defined event
n. User log
4. Shall set the following user permission:
   a. Resource permission:
• Camera
  o Live view
  o Playback
  o Capture and print pictures
  o Video search
  o Download video
  o Manual recording
  o Two way audio
  o View tag
  o Add tag
  o Edit tag
  o Delete tag
  o View lock
  o Add lock
  o Edit lock
  o Delete lock
  o PTZ control
  o Audio control
  o Show health status
  o Show face recognition information
  o Manage security
• Door
  o Control door status
  o Forgive anti-passback
  o Show health status
  o Manage security
• Elevator
  o Control elevator status
  o Show health status
  o Manage security
• Radar
  o Arm and disarm
  o Manage security
• UVSS
  o Search
  o Show health status
  o Manage security
• Security Control Partition
  o Arm and disarm
  o Manage security
• Encoding device
  o Configuration on device
  o Broadcast
  o Search log
  o Show health status
  o Manage security
• Decoding device
- Configuration on device
- Show health status
- Manage security
- Access control device
  - Configuration on device
  - Show health status
  - Manage security
- Elevator control device
  - Configuration on device
  - Show health status
  - Manage security
- Security control device
  - Configuration on device
  - Broadcast
  - Search log
  - Show health status
  - Manage security
- Dock Station
  - Search file
  - Lock file
  - Download File
  - Show health status
  - Manage security
- Alarm output
  - Alarm output control
  - Manage security
- Server
  - Show health status
  - Manage security
- User-defined event
  - Trigger alarm manually
  - Manage security

5. Configuration permission
   a. Web Client for sub-admin roles
      - Resource Management
        - Physical view: view/add/edit/delete encoding device/access control device/elevator control device/security control device/dock station/recording server/streaming server/DeepinMind server/security audit server/smart wall
        - Logical view: view/add/edit/delete
      - Event and Alarm settings: view/add/edit/delete
      - Access Level: view/add/edit/delete
      - Time & Attendance: view/add/edit/delete
      - Person
        - Person list: view/add/edit/delete/custom addition info.
        - Face comparison group: view/add/edit/delete
o Access group: view/add/edit/delete/apply to device/apply to device(scheduled)
  o Attendance group: view/add/edit/delete
  o Dock station group: view/add/edit/delete
• Visitor
  o View/add/edit/delete/access group
  o Access group: View/add/edit/delete/apply to device
• Vehicle: view/add/edit/delete
• Security: view/add/edit/delete
• System: view/edit
• Backup and restore system data
• Batch upgrade firmware
• Camera settings in license
• Manage security

b. Operation permission: for different levels of operator access
• Monitoring
  o Live view
  o Playback
  o Map
  o Public view: add/edit/delete
• Alarm center
  o View
  o Arm and disarm
  o Acknowledge alarm
  o Batch acknowledge alarm
  o Trigger pop-up window
• Event & alarm search
• Video search
• Person search
• Vehicle search
• Evidence collection
  o Search
  o Edit
  o Download
  o Delete
  o Upload
• Add new vehicle to vehicle list
• Add person to face comparison group
• Visual tracking
• Dashboard: Add/edit/delete
• People counting
• Queue analysis
• Pathway analysis
• Person feature analysis
• Heat analysis
• Temperature analysis
• Vehicle analysis
- Health monitoring
- Audit Trail
- System
- Close auxiliary screen
- Logout
- Manage security

c. Shall display by areas, or channels
d. Shall support general and rental application scenario
e. Shall separate resources and permission settings
f. Shall set management permissions for every module. Users without module permissions cannot edit permission settings through security module
g. Shall manage the permission of checking, adding, deleting, editing of each module on the Control Client
h. Shall hide modules on the Control Client
o. Shall manage resources of Remote Sites
p. Shall support the ‘copy from’ function to copy features of the existing roles

6. 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)
   i. Select importing mode as user or group
   ii. Select domain users
   iii. Configure domain users
   iv. Restrict concurrent logins
   v. Set PTZ control permission
   vi. Assign role to the domain user
   vii. View role list and detailed information
k. Force logout
l. Select users and activate/inactivate them in a batch

7. Synchronize domain users

8. 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)

9. Security Settings for Users
   a. Lock IP Address
      i. 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:
   i. Weak: a combination of at least 8 characters including two types of characters among lowercase letters, uppercase letters, numbers, and special characters.
   ii. 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)
   iii. 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
   i. 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
   i. Configurable: Lock in 10 minutes, 20 minutes, 30 minutes or “custom” number of minutes ranging from 10 to 30

e. Shall have the ability to view the details of the existing users:
   i. Name
   ii. Type
   iii. Role
   iv. Connection number
      - Connection number of Web Client
      - Connection number of Control Client
   v. Login status
   vi. User status
   vii. Expiry date

L. System and Maintenance
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, and UVSS on the map
   c. Set first day of week
   d. Set temperature unit as Celsius, Fahrenheit, or kelvin
   e. 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

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. Set a static IP address or domain name for the WAN access

   g. 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

   h. Set device access mode as automatically mode or proxy

   i. Select the NIC of the current SYS so that the system can receive the alarm information of the third-party device connected via ONVIF protocol

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
      • Recording tags
      • Face comparison data
      • Card swiping records
      • Attendance records
      • Vehicle passing records
      • Video analysis data
      • Service error logs
      • Service warning logs
      • Service information logs
      • Radar tracking logs
      • Visitor Registration Records
      • Set the duration as three months/six months/one year/two year/three years

4. Shall set the following schedule:

   a. Recording schedule template

   b. Arming 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
      - People counting
      - Queue 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

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 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. Working mode: set the working mode for the DS-K5600 face recognition series as face recognition terminal if it is applied with HIKVISION turnstile or access control terminal if it is applied with other third-party turnstile

c. Set health check frequency
   • Device health status:
     o Encoding device
     o Access control device
     o Security control device
     o Dock station
   • Server health status:
     o Recording server
     o Facial recognition server
   • Others:
     o Device capabilities
     o Recording
     o Alarm/event enabled or not
     o Remote alarm enabled or not

d. Add rules for plate fuzzy search

e. Hot spare

f. Open platform

g. Reset network information

h. Set database password by admin user

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. Shall support the applications module (including Live View, Playback, and Local Configuration) when accessing the Web Client via Internet Explorer via HTTPS protocol

15. Shall support Live View and Playback modules when accessing the Web Client via Internet Explorer, Google Chrome, and Firefox via HTTP protocol, and support local configuration module only for Internet Explorer

16. Shall support Intelligent Analysis module
   a. Dashboard
   b. People counting
   c. Queue analysis
   d. Heat analysis
e. Pathway analysis
f. Person feature analysis
g. Temperature analysis
h. Vehicle analysis

17. Admin user shall online/offline activate/deactivate license, online/offline update the license, and view license detailed information for system capabilities

18. 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.

M. Local Configuration for Live View and Playback in Web Client:

1. Network transmission:
   i. GPU hardware decoding:
      - Enable
      - Disable
   ii. Global stream:
      - Main stream
      - Sub stream
      - Smooth stream
   iii. Threshold for main/sub-stream:
      - 1/4
      - 1/9
      - 1/16
      - 1/64
   iv. Network timeout:
      - Default
      - Default x 1.5
      - Default x 2
   v. Video caching:
      - Small (1 frame)
      - Medium (6 frames)
      - Large (15 frames)
   vi. Time zone:
      - Client time
      - Device time
   vii. Picture format:
      - BMP
      - JPEG
   viii. 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

2.3.2 Control Client
A. The Control Client is a Windows-based software for security operators to access NVRs, Hybrid SANs, and network cameras using authorized client login credentials and view through the SYS. It shall provide multiple operating functionalities, including real-time live view, PTZ control, video playback and download/exporting, alarm management, VCA search, log query, and health monitoring module
B. Recommended Control Client specification shall be the following (for more details about Control Client Specifications, please refer to the document, HikCentral Professional V1.4_Software Requirements & Hardware Performance):
   - CPU: Intel® Core™ i5-4590 @3.30GHz
   - RAM: 8G
   - Network: GbE network interface card
   - Graphics Card: NVIDIA® GeForce® GTX 970
   - Hard Disk Type: SATA II hard drive or better
   - Hard Drive Capacity: 60 GB for OS and Control Client
   - Other: Microsoft® Windows 7 (64-bit Operating System)
C. On initial login, the user must use “one time” default password and shall be forced to create a new password that is not the default for future log-ins
   1. Password must at minimum contain 8 characters with at least three of the following categories: numbers, lowercase letters, uppercase letters, and special characters
D. Shall have the ability to enable auto-login, and login via domain name and password
E. Shall have the ability to automatically launch the client and login with the domain user
F. Shall have the ability to log in to the Control Client through HTTP or HTTPS
G. Shall have the ability to display the online/offline status of Remote Sites in Central System
H. Shall have the ability to customize module arrangement on Control Panel
I. Shall have the following modules and functions:
   1. Monitoring: Live view
      a. Ability to view up to 256 cameras
      b. Ability to display GIS map/related map after the camera is added on the map
      c. 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.
      d. Ability to display thumbnail of camera
      e. Ability to auto switch to sub stream of Network Camera according to the configuration of stream threshold
         i. Enable auto-switching between main stream and sub stream
         ii. Enable to set the main stream threshold as 1/2, 1/4, 1/9, 1/16, 1/25, 1/36, 1/64
iii. 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

f. Shall support up to 4 auxiliary screens during live view and 1 screen for playback

g. Ability to display license plate number when viewing LPR camera after the LPR function is activated in license

h. Ability to mark a vehicle license plate number

i. Ability to add the vehicle to vehicle list

j. Ability to go to Vehicle Search by quick link:
   i. Label
   ii. License Plate number
   iii. Vehicle passing time
   iv. Camera name
   v. Owner
   vi. Phone
   vii. Country/region
   viii. Operation
      • Add to vehicle list
      • Download

k. The following functions are available on the tile toolbar for easy access to operator:
   i. Audio control
   ii. Capture: ability to save snapshots
   iii. Print camera image
   iv. Enable manual recording of displayed Network Camera
   v. Enable and utilize two-way audio
   vi. Enable view instant playback
   vii. Digital zoom
   viii. 3D positioning for PTZ camera
   ix. Activate on-screen PTZ controls
   x. 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

xi. Arming control
xii. Switch stream type of camera
xiii. Edit transcoded stream
xiv. Live view on smart wall by graphic card
xv. VCA playback
xvi. Alarm output
xvii. Save area as view
xviii. Area auto-switch
xix. Add tag
  • Set time range
  • Add description
  • Select storage type
xx. Visual tracking
xxi. 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

i. Ability to customize camera tile toolbar
  i. Re-order icons to user preference
  ii. Remove icons of functions not required for user
m. Ability to create tile patterns with selected cameras and save as a view
  i. Save as private view, only accessible to the user profile creating the view
  ii. Save as public view, accessible to all users
  iii. Play in batch: play all cameras belonging to one area on different screens
iv. View group auto-switch
v. 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
n. Support smart wall (graphic card)
  i. Display all contents in live view on smart wall
  ii. Display live view of one camera on smart wall
  iii. Display live view of all cameras in one area on smart wall
  iv. Display e-map and GIS map on smart wall
  v. Display view and view group on smart wall
vi. Display alarm’s related video on smart wall
vii. Display Health Monitoring page on smart wall

o. PTZ Control: Shall have following options to control PTZ cameras
   i. On-screen PTZ icon
      (a) Able to control all PTZ functions available directly on camera
   ii. On tile “point and go” directional control
      (a) Able to use mouse wheel for zoom in after PTZ control is enabled
   iii. 3D Positioning: ability to draw box for region of interest to zoom in on tile

p. Support decoding and displaying Remote Site’s cameras and current site’s cameras on smart wall
q. Live view of Remote Site’s cameras
r. After reopening the client, display the view before closing the client
s. Set preset and patrol for common cameras
t. Set preset and patrol settings of fisheye camera
u. Set offline alarm schedule for Remote Sites
v. View the live video of the UVSS’s linked camera, the undercarriage picture, and recognized license plate number of the passing vehicles
w. Drag on the undercarriage picture to mark important information
x. Mark the vehicle license plate number
y. View door-related live view
   i. 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.
   ii. 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
   iii. Shall control the door status as unlock, lock, remain unlocked, remain locked, and view the card swiping record in real-time
   iv. Shall forgive anti-passback violation
   v. Shall check the turnstile status and control it as unlock, lock, remain unlocked, remain locked
   vi. Shall control all doors status as forbid/allow all doors access
   vii. Shall trigger user-defined event
   viii. Shall handle opening door request from video access control terminal, including voice talk and unlocking door
   ix. Shall show access point’s real-time status
   x. Shall support two-way audio between video access control terminal and control client

z. View elevator-related live view
   i. 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.
   ii. 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
   iii. Shall control the floor status as temporary access, access with credential, free access, or access forbidden in real-time
   iv. Shall control all floors status as forbid/allow all floors access
v. Shall trigger user-defined event  
vi. Shall show floor's real-time status  

aa. View radar-related live view  
i. Shall view the live video of the radar's calibrated cameras.  
ii. Shall arm or disarm the radar's zones  
iii. Shall show the people's moving pattern tracked by the radar on the map  

bb. View detected events in live view  
i. View/filter/clear the detected events, including face comparison event and access event  
ii. View access event details  
   (a) Profile  
   (b) Card number  
   (c) Person name  
   (d) Event  
   (e) Source  
   (f) Description  
   (g) Client time  
iii. Quick-jump to Access Record module  
iv. Add the person to person list  
v. Add recognized vehicle to vehicle list  

vi. Subscribe events  
   (a) For face comparison events, shall subscribe events of all the resources  
   (b) 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  

cc. View detected and matched face in live view:  
i. View the face comparison information between the detected faces and the face pictures in the selected face comparison group  
ii. 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  
iii. Search video of the person by the captured face picture  
iv. Add mismatched person to person list  
v. Display the similarity between the captured face picture and the original face picture in person list  

dd. View/hide detected events in live view  
i. View the detailed information of the events  
   - Event result  
   - Source  
   - Description  
   - Time  
ii. Operation
• Check the face comparison information
• Add the mismatched person to person list
• Search video about the person by the captured pictures and matched pictures

ee. View UVSS’s live view
   i. View the live video of the UVSS’s linked camera, the undercarriage picture, and recognized license plate number of the passing vehicles
   ii. Perform the following operations in live view:
       • Mark on undercarriage picture
       • Mark vehicle
       • Add vehicle to vehicle list
       • Search vehicle

ff. Diagnose when live view failed
   i. Display the details of the camera
   ii. Display the exception description
   iii. Display the diagnosis details, including requesting URL status, logging into encoding device status, getting stream from encoding device status
   iv. Quick link to event log, server log, device log, health monitoring
   v. Mark the diagnosis

2. Monitoring: Playback
   a. Ability to play back 1 to 16 cameras simultaneously
   b. Ability to display GIS map/related map
   c. When playing multiple cameras simultaneously, have ability to view in non-synchronized and synchronized mode
   d. Ability to hover on the timeline to show the time
   e. Ability to fast-forward by 1x, 2x, 4x, 8x, 16x, and slow-forward by 1/16x, 1/8x, 1/4x, 1/2x
   f. Ability to export one or multiple cameras displayed simultaneously:
      i. Set export location
      ii. Set whether to download VSPlayer for viewing
      iii. Export video files in MP4/AVI/EXE format
      iv. Set saving path
      v. Search and export video files of over 48 hours duration
      vi. Synchronize downloading time
   g. The following functions are available on the camera playback tile toolbar for easy access to operator:
      i. Capture: ability to save JPEG snapshots and search video by the captured picture
      ii. Print camera image
      iii. Clipping: ability to quickly export video clips
      iv. Add tag to video
      v. Digital zoom
      vi. Lock video: to prevent video segments from being over written by schedule
   
   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

viii. Stream type switch
ix. Playback on smart wall
x. Transcoding playback
xi. Audio on/off
xii. Video download
xiii. VCA search
xiv. Fisheye dewarping
xv. Visual tracking

h. Customize camera tile tool bar
   i. Re-order icons to user preference
   ii. Remove icons of functions not required for user
i. Support display video on the smart wall
j. Playback channels of Remote Sites
k. Search video files by time
l. Display the date with video files marked with a triangle
m. Support ATM-DVR, its playback type shall be set as command playback
n. Select storage location of recorded video files (central storage or remote storage)
o. Enable/disable thumbnails
p. Zoom in or zoom out on the timeline
q. Support dual-stream playback
r. Support AVI format for video file download
s. Encrypt to download in MP4/EXE format, and click and play directly after downloading with player in MP4 format
t. Support save the downloading file as evidence:
   i. Create evidence
   ii. Add to existing evidence
u. Support privacy mask after downloaded and played with VSPlayer
v. Adjust downloading time
w. Check the merged video files in one folder
x. Show/hide thumbnail
y. View door related playback
   i. Shall view the playback of up to two cameras in one display window
   ii. Shall trigger user-defined event
z. View elevator related playback
   i. Shall view the playback of up to two cameras in one display window
   ii. Shall trigger user-defined event
aa. View radar related playback
   i. Shall view the playback in one display window
   ii. Shall trigger user-defined event
bb. Diagnose when playback failed
   i. Display device information
   ii. Display exception description
   iii. Display the following requesting playback parameters:
       - Name
       - Online status
       - Streams number
       - CPU usage
       - RAM usage
       - HDD usage
   iv. Quick link of server log
   v. Mark the diagnosis
3. Alarm Center
   a. Alarm Management: Ability to receive and view alarm video pre-configured in the Web Client as alarms
      i. Ability to view the following alarm information:
         - Mark status
         - Alarm name
         - Alarm priority
         - Alarm time(Control client)
         - Alarm source
         - Logical Area
         - Triggering event/alarm
         - Alarm status
         - Alarm category
         - Quick link:
           o Alarm & event search
           o Two-way audio
           o Download
      ii. View 1 to 16 cameras associated with alarms
      iii. Optionally, auto view e-map and position of camera(s) on map in alarm state
      iv. Turn audio off/on
      v. Enable/disable alarm pop-up window
      vi. Arm/disarm alarms
      vii. Display the alarm related video on smart wall
      viii. Click on the alarm name to access the following functions:
Check detailed alarm information and capture
Select alarm priority and category
Add remark to the alarm
Acknowledge the alarm (one by one or in a batch)
ix. Set the layout of the alarm center: Display alarm related video & map, alarm related video only, or alarm related map only
x. When playing related video, shall support visual tracking
xi. Supports alarm linkage to smart wall, including smart wall of graphic card and decoding device
xii. Alarm linkage of smart wall supports window division and jointing
xiii. Central system can receive alarms from Remote Sites
xiv. Alarm center can display map or video, or map and video
xv. Supports multiple time zones of clients
xvi. Supports displaying alarm video on smart wall including smart wall of graphic card and decoding device
xvii. Display alarms imported from third-party system

4. Alarm and Event Search: Ability to search for alarms and events, based on the following:
i. Event Source
   - Camera
   - Door
   - Elevator
   - Alarm Input
   - ANPR
   - Person
   - UVSS
   - Remote Site
   - Encoding Device
   - Decoding Device
   - Access Control Device
   - Elevator Control Device
   - Security Control 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

ii. Event Type: The same event types configured on the Web Client

iii. Time
   - Last Hour
   - Today
- Yesterday
- Current Week
- Last 7 Days
- Custom Time Interval

iv. Ability to check and export alarms and events

5. Video Search

a. Ability to search for specific types of indexed video:
   i. Tag: Video that has been auto tagged or manually tagged at a certain timestamp
   ii. Lock: Search only video that has been “locked” to not be overwritten by schedule
   iii. Segment: Ability to search for up to 7 days of video averagely divided into segments from 1 to 100
   iv. Interval: Ability to search for up to 7 days of video divided by intervals from 1 to 60 minutes or seconds

v. 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

vi. Search ATM event triggered video footage by the card number that is contained in the ATM information

vii. 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
     o Create new evidence ID
     o Create new evidence name
     o Select evidence type
     o Select organization on site
     o Set the result/conclusion
     o Set evidence status
   • Save the video files and add to existing evidence
   • Lock file

viii. Supports thumbnails
ix. Ability to search main stream in all main storage
x. Ability to search sub-stream in all main storage
xi. Ability to search main stream in all auxiliary storage
xii. Ability to search sub-stream in all auxiliary storage
xiii. Ability to search the video files from Central System or Remote site

b. VCA Search
   • Support Motion Detection
   • Support Line Crossing Detection
   • Support Intrusion Detection
   • Support reverse playback
   • Support downloading the searched video clips
   • Support displaying the video clips in the list or thumbnail mode
- Support playing searched video clips in order
- Support searching face picture and related video by picture
- Support searching matched face picture and relate video
- Support searching frequently appeared person’s pictures
- Support using the added person’s face picture or upload one as desired
- Support displaying the searched results in list mode or thumbnail mode
- Support viewing large picture and the related video
- Support downloading the current picture and video in the format of MP4, AVI and EXE
- Support adding the person to the person list

6. Person Search
   a. Search by Face Picture
      i. Ability to search face picture to view face-related face pictures and videos. It includes 3 types:
         • Search matched pictures: Ability to search videos of a person who is added to the face comparison group
         • Search captured pictures: Ability to search related videos of an uploaded face picture by camera, time, person information, and similarity
         • Search frequently appeared persons: Ability to search persons who appear frequently
   b. Search by Archive
      i. The system will save the features and information (including captured picture and video) of the captured person as archive.
      ii. Ability to upload a picture and search the related archives of a face picture to check the captured pictures or videos of similar persons
      iii. Ability to adjust the similarity
      iv. Ability to check whether a person is a stranger
      v. Ability to export the search results
   c. Search by Identity Verification
      i. Ability to upload a picture and search the persons who are similar with the person in the picture. Check the matched person information
      ii. Ability to upload two pictures and compare them to see the similarity of the persons in those two pictures
      iii. Ability to adjust the similarity

7. Evidence Search
   i. Set the following search conditions:
      • ID
      • Keywords
      • Evidence type
      • Organization on site
      • Result/conclusion
      • Evidence status
      • Uploading time
   ii. Check the search result:
      • Name
      • ID
      • Type
- Organization on site
- Result
- Status
- Description
- Uploading time

iii. Check and download the content of evidence

8. Vehicle Search
   i. Support searching vehicles via ANPR camera or UVSS
   ii. Support filtering vehicles via the marked/unmarked status, country/region, plate number, owner, or time
   iii. Support searching vehicles with no license plate
   iv. Support adding tag
   v. Support viewing the label status, plate number, vehicle passing item, camera, owner, phone number, country/region of the vehicle
   vi. Support adding the vehicle to vehicle list
   vii. Support downloading the vehicle information and video
   viii. Support viewing the captured vehicle picture, undercarriage picture, or related video
   ix. Support exporting the searched vehicle records and downloading the related video
   x. Support modifying the recognized license plate number

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

10. Intelligent Analysis
    a. Dashboard
    i. 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
    ii. Ability to add/delete dashboard, edit dashboard name.
iii. Ability to save different reports as a Dashboard, export Dashboard data, display Dashboard on auxiliary screen.

b. People Counting
   i. 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
   ii. Ability to view the people counting statistics in a line chart or histogram, and switch between line chart and histogram
   iii. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
   iv. Ability to select shorter time period to view more detailed data of each camera
   v. Ability to export the detailed data of counting report in CSV/Excel format
   vi. Ability to search the video linkage by month, date, week, hour, and play corresponding video to check people counting
   vii. Ability to display up to 20 people counting cameras with different colors in people counting report of entry/exit
   viii. Ability to view entered/exited/both entered and exited statistics
   ix. Ability to show/hide data of certain cameras
   x. Ability to view both entered and exited statistics of single cameras
   xi. Ability to play linked video of camera(s)
   xii. Ability to add report to dashboard

c. Queue Analysis
   i. Ability to generate a report to show the number of queue exceptions and number of persons in each queue
   ii. Ability to display the queue status including waiting duration and queue length
   iii. Ability to generate the report as daily report, weekly report, monthly report, or annual report
   iv. Ability to set the time period in the time field for statistics
   v. 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
   vi. Ability to set the queue length to display how many seconds each queue status lasts
   vii. Ability to show/hide certain data of certain element
   viii. Ability to view the report of the single queue, including the number of exceptions, number of people in queue, and waiting duration
   ix. Ability to switch between number of exceptions, number of people, and queue length
   x. Ability to set the report type and report time
   xi. Ability to select shorter time period to view more detailed data of each queue
   xii. Ability to select the queue exception, people amount exceeding, waiting timeout, person amount in queue, queue status to export
   xiii. Ability to select the saving path
   xiv. Ability to set the format as Excel or CSV
   xv. Ability to add report to dashboard

d. Heat Analysis
   i. 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
   ii. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
iii. Ability to calculate people dwell time, people amount, and average dwell time
iv. Ability to export heat map report in PDF/Excel format
v. Ability to add report to dashboard
e. Pathway Analysis
   i. Ability to calculate the number of people walking by
   ii. Ability to set the time as daily, weekly, monthly, annually, or custom time interval
   iii. Ability to generate the report to view the line chart or heat map of the people amount
   iv. Ability to export heat map report in PDF/Excel format
   v. Ability to add report to dashboard
f. Person Feature Analysis
   i. 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
   ii. Ability to set report type (Daily, Weekly, Monthly, Annual, or customize the time interval for a report)
   iii. 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
   iv. Ability to export report in CSV/Excel format
   v. Ability to add report to dashboard
g. Temperature Analysis
   i. Ability to display the number of exceptions (temperature too high or too low) and maximum/minimum temperature of different thermometry points on different presets
   ii. Ability to select the report type as daily report, weekly report, monthly report, annual report, or customize the time interval for a report
   iii. Ability to show/hide certain data of preset or thermometry point
   iv. Ability to display temperature report of single preset
   v. Ability to display temperature report of single thermometry point
   vi. Ability to display the number of exceptions that the temperature at this thermometry point is higher or lower than the pre-defined temperature
   vii. Ability to display the maximum/minimum temperature at this thermometry point during the set time period
   viii. Ability to select the camera and preset, and set the report type and report time
   ix. Ability to select shorter time period to view more detailed data
   x. Ability to export the number of exceptions on temperature of each thermometry point
   xi. Ability to export the maximum temperature and minimum temperature of each thermometry point
   xii. Ability to set the saving path of the report
   xiii. Ability to export the report in the format of Excel or CSV
   xiv. Ability to add report to dashboard
h. Vehicle Analysis
   i. Ability to display the number of passing vehicles detected by the specified cameras during specified time period
   ii. Ability to select up to 20 ANPR camera for statistics at the same time
iii. Ability to select the report type as daily, weekly, monthly, annual report or customize the time interval

xv. Ability to select shorter time period to view more detailed data

iv. Ability to customize the saving path of the report

v. Ability to export the report in the format of Excel or CSV

vi. Ability to add report to dashboard

11. Health Monitoring

a. 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.

b. Overview: Provide status of the following devices and the ability to click on items for a detailed report:

i. Set auto refresh or refresh manually

ii. Display health monitoring on smart wall (graphic card)

iii. Display health monitoring on auxiliary screen

iv. Offline/total number of cameras

v. Number of camera with video loss

vi. Number of camera with communication exception

vii. Number of camera with recording exception

viii. Number of camera with no recording schedule

ix. Number of camera with arming exception

x. Abnormal/total number of access points

xi. Offline/total number of UVSS(s)

xii. Offline/total number of Remote Sites

xiii. HikCentral Professional Service status

• Management server status

• Memory status

• CPU status

• RAM status

• Network status

• Streaming gateway usage

• Picture storage usage

xiv. Recording Server status

xv. DeepinMind Server status

xvi. Security audit server status

xvii. Application Data Server status

xviii. Application Data Standby Server status

xix. Number of streaming server with exception

xx. Number of streaming server with notice

xxi. Number of normal streaming server

xxii. Total number of streaming server

xxiii. Number of recording server with exception

xxiv. Number of recording server with notice

xxv. Number of normal recording server
xxvi. Total number of DeepinMind server
xxvii. Number of DeepinMind server with exception
xxviii. Number of DeepinMind server with notice
xxix. Number of normal DeepinMind server
xxx. Abnormal/total number of Encoding Devices
xxxi. Abnormal/total number of Access Control Devices
xxxii. Abnormal/total number of Elevator Control Devices
xxxiii. Offline/total number of Decoding Devices
xxxiv. Abnormal /total number of Security Control Devices
xxxv. Abnormal /total number of dock station
c. Camera of Central System: Provide the status of the followings:
   i. Name
   ii. Address
   iii. Area
   iv. Connection number
   v. Network status
   vi. Video signal
   vii. Recording status
   viii. Arming status
   ix. Operation: Refresh to get the real-time status immediately of the camera; go to logical view of the camera
d. Camera of Remote Site: Provide the status of the followings:
   i. Name
   ii. Address
   iii. Area
   iv. Network status
   v. Recording Status (in Central System)
   vi. Arming status
   vii. Operation: Refresh to get the real-time status immediately of the camera; go to logical view of the camera
e. Door: Provide the status of the followings:
   i. Name
   ii. Access Control Device
   iii. Area
   iv. Access Control Device network status
   v. Face Recognition Terminal network status
   vi. Door status
   vii. Configured Door status
   x. Operation:
      • Refresh to immediately get the real-time status of the door
      • Control door status as: Unlock/Lock/Remain Unlocked/Remain Locked
f. Elevator: Provide the status of the followings:
   i. Name
   ii. Elevator Control Device
   iii. Area
   iv. Elevator Control Device network status
   v. Card reader status
   vi. Floor status
vii. Configured floor status  

xi. 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

g. UVSS: Provide the status of the followings:  
i. Name  
ii. Address  
iii. Area  
iv. Network status  
v. Line Scan Camera status  
vi. Capture Camera status  
vii. Storage status  
viii. Operation:  
   • Refresh to immediately get the real-time status of the UVSS  
   • Go to logical view of the unit

h. Remote Site: Provide the status of the followings:  
i. Name  
ii. Version  
iii. Address  
iv. Network Status  
v. Default Stream  
vi. Operation:  
   • Refresh to immediately get the real-time status of the site  
   • Switch the device accessing mode between automatically judge or proxy  

vii. Restore All Network Connections  
viii. Switch stream type between main stream, sub-stream, smoothing or default stream type

i. Recording Server: Provide the status of the followings  
i. Name  
ii. Address  
iii. Type  
iv. Network status  
v. CPU usage  
vi. RAM usage  

vii. Hot Spare Property  
viii. Recording status  
ix. Hardware status  
x. HDD status  
xi. HDD usage  
xii. First added time (client time)  
xiii. Checking time (client time)  
xiv. Operation  
   • Refresh to immediately get the real-time status of the Recording Server

j. DeepinMind Server: Provide the status of the followings  
i. Name  
ii. Address
iii. Type
iv. Network status
v. CPU usage
vi. RAM usage
vii. First added time (client time)
viii. Checking time (client time)
ix. Operation:
   • Refresh to immediately get the real-time status of the server
k. Streaming Server: Provide the status of the followings
   i. Name
   ii. Address
   iii. Total streams
   iv. Incoming streams
   v. Outgoing streams
   vi. Network status
   vii. CPU Usage
   viii. RAM Usage
   ix. First added time (client time)
   x. Checking time (client time)
   xi. Operation:
      • Refresh to immediately get the real-time status of the Streaming Server
l. Security audit server: Provide the status of the followings
   i. Name
   ii. Address
   iii. HDD status
   iv. Network status
   v. CPU Usage
   vi. RAM Usage
   vii. First added time (client time)
   viii. Checking time (client time)
m. Encoding Device: Provide the status of the followings
   i. Name
   ii. Address
   iii. Device Serial No.
   iv. Version
   v. Network status
   vi. HDD status
   vii. HDD usage
   viii. Recording status (Local Device)
   ix. Default Stream
   x. Access Protocol
   xi. Hot spare property
   xii. Arming status
   xiii. RAID
   xiv. First added time (client time)
   xv. Checking time (client time)
   xvi. Operation
      • Refresh to immediately get the real-time status of the device
• Go to Logical View of the camera

xvii. 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 Streaming gateway and the Management service

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

n. Access Control Device: Provide the status of the followings:
i. Name
ii. Address
iii. Device Serial No.
iv. Version
v. Network status
vi. Master/Slave lane controller network status
vii. Component status
viii. Battery status
ix. Arming status
x. First added time (client time)
xi. Checking time (client time)
xii. Operation: Refresh to immediately get the real-time status of the Device; go to physical view of the device

o. Elevator Control Device: Provide the status of the followings:
i. Name
ii. Address
iii. Device Serial No.
iv. Version
v. Network status
vi. Battery status
vii. Arming status
viii. Distributed elevator controller status
ix. First added time (client time)
x. Checking time (client time)
xii. Operation: Refresh to immediately get the real-time status of the Device; go to physical view of the device

p. Security Control Device: Provide the status of the followings:
i. Name
ii. Address
iii. Device Serial No.
iv. Version
v. Network status
vi. Battery status
vii. Arming status
viii. First added time (client time)
ix. Checking time (client time)
x. Operation: Refresh to immediately get the real-time status of the Access Control Device

q. Dock Station: Provide the status of the followings:
i. Name
ii. Address
iii. Device Serial No.
iv. Version
v. Network status
vi. HDD status
vii. HDD usage
viii. First added time (client time)
ix. Checking time (client time)
x. Operation: Refresh to immediately get the real-time status of the decoding device

r. Decoding Devices: Provide the status of the followings:
i. Name
ii. Address
iii. Device Serial No.
iv. Version
v. Network status
vi. Manufacturer
vii. First added time (client time)
viii. Checking time (client time)
ix. Operation: Refresh to immediately get the real-time status of the decoding device

s. Display host server and spare server when hot spare function is enabled

12. Tools
a. Smart Wall
i. Shall synchronize the logging mode with the video surveillance client
ii. Shall refresh and synchronize the smart wall information
iii. Shall select camera or signal source as the encoding device type
iv. Shall add view and view group, edit view name and view group name, and delete view and view group
v. Shall support auto-switch of views belonging to the same view group, and set time interval between views
vi. Shall save views, and sort views via created time or manually
vii. Shall create a roaming window, adjust window size, enlarge window, and display window on top layer
viii. 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
ix. Shall support window division of up to 36 windows, window jointing, and display/hide the window ID for Keyboard usage
x. Shall view, download and print the window No. and camera ID
xi. Shall enable auto-switch stream type and view window No. and camera ID
xii. Shall lock/unlock the selected window
xiii. 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
xiv. Shall display live view of cameras of added video security control panels and video access control terminals
xv. Shall support PTZ control, auto-switch stream type, switching to sub-stream manually, and stopping decoding manually
xvi. Shall display alarm-related video on smart wall, and mark on the alarm window
xvii. Shall query smart wall logs
xviii. Shall display one smart wall in the center, or up to three walls side-by-side
xix. Shall switch to alarm center to check alarm list
b. Quick icon to download or open standalone VSPlayer
c. Broadcast: Ability to do a general audio announcement to all audio-enabled network cameras and end devices
d. Alarm Output Control: Ability to turn on/off the alarm outputs of the connected camera
e. Two-Way Audio: Ability to select camera with audio in/out and receive and send audio communications between the Control Client and the camera

13. Management
   a. Download Center: Ability to view status of all video files being exported
      i. Start (all)
      ii. Stop (all)
      iii. Delete all
      iv. Download (VS) Player
      v. Set download time as 00:00-06:00, 06:00-12:00, 12:00-18:00, 18:00-24:00, or custom time settings
      vi. View the status of video files uploading:
         • Start all
         • Stop all
         • Delete all
         • Download player
      vii. View the status of video files downloaded:
         • Save as
         • Delete
         • Download player
   b. Local Picture Management:
      i. Ability to easily browse snapshots that have been stored in accessible Windows file folders
      ii. Ability to save, print, or delete the captured pictures
   c. Local Recording management:
      i. Ability to easily browse video clips that have been stored in accessible Windows file folders
      ii. Ability to save or delete the video clips
   d. Basic Settings:
      i. General settings: support the following settings:
         • Shall set global stream as main stream, sub-stream or smooth stream
         • Shall set threshold for main/sub-stream as 1/2, 1/4, 1/9, 1/16, 1/25, 1/36, 1/64
Shall set the default waiting time for the Control Client as default value, default value x1.5, or default value x2
Shall set picture format as JPEG or BMP
Shall set the maximum mode as Full Screen or Maximize
Set time zone as client time or device time
Enable time difference
Set bandwidth to affect downloading from pStor
Shall enable Auto-login
Shall resume last interface: Control panel, last interface, or specific view
Shall enable display window No.

ii. Image Settings
Shall set the view scale in live view or playback as Full Screen or Original Resolution
Shall set the window scale as 4:3 or 16:9
Shall set video caching as small (1 frame), medium (6 frames) or large (15 frames)
Shall decode continuously when switching between one window and multiple windows after enabling continuous decoding
Shall set video caching parameters based on network performance, computer performance, and bit rate. Larger frame caching will result in better video performance
Shall support GPU decoding
Shall display overlay transaction information to view ATM transaction information in live view and playback
Shall display overlay transaction information on the live view and playback
Shall display overlay temperature information on the live view and playback
Shall display the VCA rule in the live view and playback

iii. Shall edit saving path of manually 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

14. Audit Trial: search and view logs for the following
a. Server Logs
   i. Error Log
   ii. Warning Log
   iii. Information Log
b. Device Logs
   i. Online/offline logs
   ii. Logs on device
c. Resource Logs
   Online/offline logs
   Recording status
d. Log searches are based on operation, user, and time interval searches of:
   i. Today
ii. Yesterday
iii. Current week
iv. Last 7 days
v. Last 30 days
vi. Custom time interval

2.3.3 Mobile Client

A. Mobile Client is an App on a smart phone or tablet (Apple iOS or Android) for security operators to access the platform remotely via LAN, WAN or Internet. It shall provide multiple operating functionalities, including real-time live view, PTZ control, video playback and alarm notification.

B. On initial log in, users must enter the SYS's IP and port number in the server address box.

C. Users shall be able to log in with HTTP or HTTPS transfer protocol.

D. Mobile Client shall have the following modules and functions:
   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
   8. Ability to view logical area of the current site or Remote Sites
   9. Ability to display logical areas, and the thumbnail of cameras in each area
   10. Ability to add tag during playback
   11. Ability to add person to face comparison group
   12. Ability to mark the days with recorded videos on the calendar when setting the time to start playback
   13. Ability to display resources by resource types (camera, door or UVSS) or displaying all the resources in the Favorites
   14. Ability to filter to display the resources of cameras or access points
   15. Ability to search passing vehicles log for HD version via category (camera by default), time, country, mark status, vehicle plates, and owner
   16. Ability to support multiple time zones for searching recording files, alarm logs, and heat map reports
   17. Logical Resources: Ability to switch between Live View and Playback
      a. Live View:
         i. Ability to add/delete cameras for multiple view, and view up to 8 cameras simultaneously
         ii. Ability to set 1/4/9 window division for tablet
         iii. Ability to switch to saved view pattern
         iv. Ability to view real-time video from stream encryption device
         v. Ability to view real-time video from the Under Vehicle Surveillance System’s related camera (only for tablet)
         vi. Ability to play the live videos or video footage of multiple resources simultaneously
         vii. Ability to view the live video of the door's related camera.
viii. 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.

ix. Ability to view the live video of the elevator’s related camera.

x. Ability to control the status for each floor (temporary access, access with credential, free access, or access forbidden) linked to the elevator control device.

xi. Ability to view the live video of the radar’s related camera.

xii. Ability to arm/disarm the radar during the live view of the radar’s related camera.

xiii. Ability to display persons’ real-time access records, including person profile, person name, and access results.

xiv. Ability to view the recognized passing vehicle information, including license plate number and passing time.

xv. 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).

xvi. Ability to mark on the captured real-time undercarriage picture (only for tablet).

xvii. Ability to add new vehicle to the vehicle list.

xviii. Ability to view the person’s face comparison information (real-time and history), including captured face picture, person details, captured time, and similarity.

xix. Ability to add mismatched person into person list.

xx. Ability to trigger user-defined event manually.

xxi. Ability to subscribe all access and face comparison events (only for tablet).

xxii. Ability to switch cameras if the access control point links two cameras.

xxiii. Has the following functions available on tile toolbar for easy access:
  - Upload the generic event during live view.
  - Toggle the settings between 1, 4, 9 tiles (only for tablet).
  - Stop/recover all the live views.
  - Capture: ability to save snapshots, and share the captured pictures via email.
  - Preview the captured picture and recorded video footage.
  - Enable manual recording of displayed cameras, and share the manual recording files via email.
  - Switch on/off audio.
  - Enable and utilize two-way audio.
  - Digital zoom.
  - Switch between sub-stream and main stream.
  - Add the camera/view to Favorites/View.
  - PTZ control
    - Start/stop the auto-scan.
    - Zoom +/-.
    - Focus +/-.
    - Iris +/-.
    - Manage presets.
    - 3D positioning.
  - Fisheye dewarping.
  - Ability to live view in full-screen mode.

b. Playback
i. Ability to playback 1 to 4 cameras simultaneously for tablet.
ii. Ability to playback up to 1 camera simultaneously for phone
iii. Ability to playback video from stream encryption device
iv. Ability to stop playback of all cameras in one step or one by one
v. Ability to choose date and storage location for playback
vi. Ability to search cameras for playback by name or choose cameras added to Favorites
vii. Ability to restore the playback interface when the user logs out
viii. Ability to switch the window for playback
ix. Ability to search Logical Area/Access point/Camera via key words
x. Ability to support synchronous playback
xi. Ability to playback the cameras of Remote Sites
xii. Ability to support VCA search (only for tablet)
xiii. Ability to add person into Person List (only for tablet)
xiv. 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)
xv. Ability to add/delete/edit tags and search video via tags (only for tablet)
xvi. Ability to playback single camera in full-screen mode
xvii. Has the following functions available on camera playback tile toolbar for easy access:
  • Capture: ability to save snapshots
  • Clipping: ability to quickly create and export video clip
  • Pause the playback
  • Digital Zoom
  • Add tag during Playback
  • Switch the playback speed to 1/4X, 1/2X, 1X, 2X and 4X
  • Stop/resume the playback
  • Switch on/off audio
  • Fisheye dewarping
  • Locate the timeline of playback manually
xviii. Fisheye dewarping
xix. Activate on-screen PTZ controls
c. Make the HD version’s user interfaces of Live View and Playback page consistent with the phone version
d. Search (only for tablet)
  i. Ability to search video: search tagged video and VCA event related video
  ii. Ability to search passing vehicle logs: search record of the passing vehicle, and view the vehicle details
  iii. Ability to search access records: search the persons’ access records and view the access details including person details and access point information
  iv. Ability to add person to person list
e. Camera: Ability to show the following camera information and functions:
  i. Network status
  v. PTZ control permission
  vi. Area name
  vii. Live view
  viii. Playback
  ix. Add/remove to/from Favorites
f. Favorites
   • Ability to manage frequently checked cameras
   • Display the mixed list of camera, door and UVSS or list of some specific resources

g. Picture and Video
   i. Ability to manage pictures and video clips manually captured or clipped in Live View and Playback
      • View or play
         (a) Capture a picture of the playback video
         (b) Pause the playback
         (c) Switch on/off audio
         (d) Play back in full screen
   ii. Send via email
   iii. Share to social Apps
   iv. Export the captured pictures to the local system of iOS client
   v. Delete

h. Supports sub-areas in the resource tree

18. View
   i. View the favorites list of cameras and access points
   ii. View the saved views list, and Live View or Playback the resources of the views
   iii. View the Live View and Playback of the views
   iv. View public view/private view

19. Alarm
   a. Alarm Notification: Ability to receive pop-up alarm notifications
      i. Alarm notification includes the following information:
         (a) Alarm type
         (b) Alarm time
         (c) Live view of the camera
         (d) Playback of the camera
   b. Alarm Information: Ability to check and manage alarm history information
      i. Alarm messages shall include the following information:
         (a) Alarm priority
         (b) Alarm category
         (c) Alarm source
         (d) Alarm time
         (e) Alarm name
         (f) Whether acknowledged
         (g) Server time
         (h) Triggering event
         (i) Acknowledge information
      ii. Alarm center has the following functions:
         (a) Refresh to check latest alarm information
         (b) Filter alarm by time, marking status, alarm priority, alarm category and alarm status
         (c) Switch to show marked/unmarked alarm only
         (d) Mark alarm message
         (e) Live view and playback the related video
      iii. Filter from and display the following alarm types:
         (a) Normal alarm
         (b) ANPR alarm
(c) UVSS alarm  
(d) Face comparison alarm  
(e) Access control alarm  
(f) Log in/out alarm  
(g) Generic alarm  
(h) Server alarm  
(i) Alarm information from security control devices  

iv. 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.

20. Video Analysis (only for tablet)  
i. Ability to generate people counting report and filter the specific information  
ii. Ability to generate queue analysis report and filter the specific information  
iii. Ability to generate temperature report and filter the specific information  
iv. Ability to generate vehicle analysis report and filter the specific information  
v. Ability to support Heat Analysis reports

21. Person management  
i. Registration for persons and visitors  
ii. 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  
iii. 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

22. Map (only for tablet)  
i. Ability to show the related map of the alarm  
ii. Ability to show resource and view the details when click the icon  
iii. Ability to switch e-map  
iv. Ability to filter according to resource type  
v. Ability to view live view of a single/multiple resource(s)  
vi. Ability to search, then jump to the pointed place  
vii. Ability to add label to map  
viii. Ability to view history alarm  
ix. Ability to perform access control  
x. Cross-site map display and operation

E. Other Functions  
1. Basic Information  
a. Ability to check the current account information  
i. User name  
ii. Login mode  
iii. Server information  
iv. Server address  
v. Server version  
b. Ability to rename server alias  
c. Ability to view the account list  
d. Ability to logout  
e. Ability to upload person information
f. Ability to switch between the following accessing device modes when performing live view or playback:
   i. Restore default
   ii. Automatically judge
   iii. Directly access
   iv. Proxy
g. Ability to enable GPU decoding
h. Ability to show network traffic data used in the following environments:
   i. Mobile Network
   ii. Wi-Fi
i. Ability to mark logical areas with sub-areas

2. About
   a. Ability to show the current App version
   b. Ability to show new features of the current version
   c. Ability to update to the latest version

2.3.4 Keyboard
   A. Shall login to HikCentral Professional by inputting the IP address, KPS port, HikCentral Professional user name and password
   B. Shall login to HikCentral Professional by HTTP/HTTPS
   C. Shall view the logical areas of Remote Sites and current sites
   D. Shall select the window to decode cameras of Remote Sites and the current site for live view
   E. Shall support the PTZ function of Light, Wiper, Focus, Iris, Zoom, and control PTZ permissions and release PTZ permissions via the logged user
   F. Shall split windows (only for DS-1100KI, DS-1600KI and DS-1200KI )
   G. Shall support using the saved preset, patrol, and pattern (only for DS-1600KI, DS-1100KI and DS-1200KI)
   H. Shall support 3D PTZ function
   I. Shall set preset (only for DS-1600KI) and pattern(only for DS-1600KI), and auto-scan
   J. Shall display wall list on the keyboard (only for DS-1600KI)
   K. Shall switch views saved in Smart Wall, and refresh logical area (only for DS-1600KI)
   L. Shall enlarge and restore windows (only for DS-1600KI )
   M. Shall roam windows (only for DS-1100KI and DS-1600KI)
   N. Shall display graphic card screen, live view on screen, PTZ control and fisheye dewarping (only for DS-1005KI)

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® Core™ 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

Part 3 Execution

3.1 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.
3.2 Preparation
   A. Devices packaged in such way to help prevent any damage during construction.

3.3 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.

3.4 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.

3.5 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.

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

END OF SECTION
## Part 4 Appendix

### 4.1 Server Logs

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

#### 4.1.1 Error Logs

The Error Log shall be searchable by the following subcategories:

<table>
<thead>
<tr>
<th>Error Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding Access Control Device Failed</td>
</tr>
<tr>
<td>Acknowledging Alarm Failed</td>
</tr>
<tr>
<td>Activating License Failed</td>
</tr>
<tr>
<td>Adding Application Data Server Error</td>
</tr>
<tr>
<td>Add Entry &amp; Exit Counting Rule Failed</td>
</tr>
<tr>
<td>Add Leave Application in a Batch</td>
</tr>
<tr>
<td>Add Major Leave Type</td>
</tr>
<tr>
<td>Add Minor Leave Type</td>
</tr>
<tr>
<td>Add Visitor</td>
</tr>
<tr>
<td>Add Visitors in a Batch</td>
</tr>
<tr>
<td>Adding Access Point Failed</td>
</tr>
<tr>
<td>Adding Anti-Passback Rule Failed</td>
</tr>
<tr>
<td>Adding Dashboard Failed</td>
</tr>
<tr>
<td>Adding Decoding Device Failed</td>
</tr>
<tr>
<td>Adding DeepinMind Server Failed</td>
</tr>
<tr>
<td>Adding Element to Access Level Failed</td>
</tr>
<tr>
<td>Adding Elevator Control Device Failed</td>
</tr>
<tr>
<td>Adding Encoding Device Failed</td>
</tr>
<tr>
<td>Adding Facial Recognition Server Error</td>
</tr>
<tr>
<td>Adding Location for GIS Resource Group Failed</td>
</tr>
<tr>
<td>Adding Location for Resource Group Failed</td>
</tr>
<tr>
<td>Adding Multi-door Interlocking Rule Error</td>
</tr>
<tr>
<td>Adding Person Group Failed</td>
</tr>
<tr>
<td>Adding Radar Element Failed</td>
</tr>
<tr>
<td>Adding Recording Server Failed</td>
</tr>
<tr>
<td>Adding Resource Group for Alarm Failed</td>
</tr>
<tr>
<td>Adding Resource Group for Heat Analysis Failed</td>
</tr>
<tr>
<td>Adding Resource Group for Pathway Analysis Failed</td>
</tr>
<tr>
<td>Adding Resource Group for People Counting Failed</td>
</tr>
<tr>
<td>Adding Resource Group for Person Features Failed</td>
</tr>
<tr>
<td>Adding Security Audit Server Failed</td>
</tr>
<tr>
<td>Adding Smart Wall Failed</td>
</tr>
<tr>
<td>Adding Streaming Server Failed</td>
</tr>
<tr>
<td>Adding Tag Failed</td>
</tr>
<tr>
<td>Adding txt Template for Attendance Report Failed</td>
</tr>
<tr>
<td>Adding UVSS Failed</td>
</tr>
<tr>
<td>Adding View for Smart Wall Failed</td>
</tr>
<tr>
<td>Task Description</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Adding View Group for Smart Wall Failed</td>
</tr>
<tr>
<td>Adding View Schedule Failed</td>
</tr>
<tr>
<td>Adjusting Order of Smart Wall Views Failed</td>
</tr>
<tr>
<td>Adjusting Screen Brightness Failed</td>
</tr>
<tr>
<td>Adjusting Screen Contrast Failed</td>
</tr>
<tr>
<td>Adjusting Screen Resolution Failed</td>
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<tr>
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<td>Fast Forward Playback on smart wall Failed</td>
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<td>Floor Control: Free Access Failed</td>
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<td>Floor Control: Temporary Access Failed</td>
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<td>Getting Recording Schedule on Camera Error</td>
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<td>Going to VCA Search in Live View Failed</td>
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<td>Going to VCA Search in Playback Failed</td>
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<td>Importing Face Comparison Groups from Device Failed</td>
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<td>Linking Decoding Output with Smart Wall Failed</td>
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<td>Live View on Smart Wall via Network Keyboard Failed</td>
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<td>Locking All Doors Failed</td>
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<td>Login via Network Keyboard Failed</td>
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<td>Managing Persons in Face Comparison Group by Group Failed</td>
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<td>Obtaining Live View Parameters via Network Keyboard Failed</td>
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<td>Pausing Camera Auto-Switch on Smart Wall Failed</td>
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<td>Removing Element from Access Level Failed</td>
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<td>Searching History Access Events Failed</td>
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<td>Setting Time for Calculating Attendance Data Automatically Failed</td>
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<td>Slow Forward Playback on Smart Wall Failed</td>
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<td>Start Clipping in Playback Failed</td>
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<td>Start Preview Record Failed</td>
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<td>Starting Camera Auto-Switch on Smart Wall Failed</td>
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<td>Starting Live View on Smart Wall Failed</td>
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<td>Starting Wipers Failed</td>
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<td>Stopping All Live Videos on Smart Wall Failed</td>
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<td>Stopping Auto-Switch of Smart Wall Views Failed</td>
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<td>Stopping Playback of Door Failed</td>
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<td>Stopping Playback on Smart Wall Failed</td>
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<tr>
<td>Stopping Wipers Failed</td>
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<td>Transcoding Playback Failed</td>
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<td>Unlocking Door Failed</td>
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<td>Unlocking Failed</td>
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<td>User Login Failed</td>
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<td>Viewing Live View of Next Camera on Smart Wall Failed</td>
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<td>Viewing Live View of Previous Camera on Smart Wall Failed</td>
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<tr>
<td>Visitor Check out Manually</td>
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<td>Window Division Failed</td>
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### 4.1.2 Warning Logs

The Warning Log shall be searchable by the following subcategories

- License Expired

### 4.1.3 Information Logs

The Information Log shall be searchable by the following subcategories

- Access Forbidden
- Access Forbidden Schedule
- Access With Credential
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<tr>
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<tr>
<td>Acknowledge Alarm</td>
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<tr>
<td>Activate Access Control Device</td>
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<tr>
<td>Activate Device</td>
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<tr>
<td>Activate Elevator Control Device</td>
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<tr>
<td>Activate License</td>
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<tr>
<td>Activate Online Device</td>
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<tr>
<td>Activate Recording Server</td>
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<tr>
<td>Activating Elevator Control Device Failed</td>
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<td>Add Attendance Check Point</td>
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<td>Add Attendance Group</td>
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<td>Add Camera Element</td>
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<td>Add Access control Device</td>
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<tr>
<td>Add Access Group (Basic Information)</td>
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<td>Add Access Level (Basic Information)</td>
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<td>Add Access Schedule Template</td>
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<td>Add Alarm Category</td>
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<td>Add Alarm Input Element</td>
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<td>Add Alarm Output Element</td>
</tr>
<tr>
<td>Add Alarm Priority</td>
</tr>
<tr>
<td>Add Alarm Settings</td>
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<tr>
<td>Add Anti-Passback Rule</td>
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<td>Add Application Data Server</td>
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<td>Add Area</td>
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<tr>
<td>Add Arming Schedule Template</td>
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<td>Add Card to Person</td>
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<td>Add Dashboard</td>
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<td>Add Decoding Device</td>
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<tr>
<td>Add DeepinMind Server</td>
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<tr>
<td>Add Defense Schedule Template</td>
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<tr>
<td>Add Device Upgrade Schedule</td>
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<td>Add Dock Station</td>
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<td>Add Dock Station Group</td>
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<td>Add Door</td>
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<td>Add Door to Access Level</td>
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<td>Add Door to Anti-Passback Rule</td>
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<td>Add Element to Access Level</td>
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<td>Add Elevator Control Device</td>
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<td>Add Elevator Resource</td>
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<td>Add Elevator's Related Camera</td>
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<td>Add Email Template</td>
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<tr>
<td>Add Encoding Device</td>
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<td>Add Entry &amp; Exit Counting Rule</td>
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<td>Add Event Settings</td>
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<tr>
<td>Add Evidence</td>
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<tr>
<td>Add Face Comparison Group</td>
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</table>
- 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
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<td>Add Site to GIS Map</td>
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<td>Add Smart Wall</td>
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<td>Add txt Template for Attendance Report</td>
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<td>Add User-Defined Event</td>
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<td>Add Vehicle List</td>
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<td>Add Video Copy-back Schedule for Dock Station</td>
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<td>Apply Face Comparison Group to Device and Link Camera</td>
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<td>Apply Hot Spare Settings to NVR</td>
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<td>Stop Live View of Local Signal Source on Smart Wall</td>
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</tr>
<tr>
<td>Stop Live View of Radar</td>
<td></td>
</tr>
<tr>
<td>Stop Playback</td>
<td></td>
</tr>
<tr>
<td>Stop Playback of Door Related Camera</td>
<td></td>
</tr>
<tr>
<td>Stop Playback of Radar</td>
<td></td>
</tr>
<tr>
<td>Stop Playback on Smart Wall</td>
<td></td>
</tr>
<tr>
<td>Stop Recording in Live View</td>
<td></td>
</tr>
<tr>
<td>Stop Recording in Playback</td>
<td></td>
</tr>
<tr>
<td>Stop Single-Screen Auto-Switch</td>
<td></td>
</tr>
<tr>
<td>Stop Two-Way Audio</td>
<td></td>
</tr>
<tr>
<td>Stop View Auto-Switch</td>
<td></td>
</tr>
<tr>
<td>Subscribe Access Control Event</td>
<td></td>
</tr>
<tr>
<td>Switch Application Data Server</td>
<td></td>
</tr>
<tr>
<td>Switch Stream in Live View</td>
<td></td>
</tr>
<tr>
<td>Switch View</td>
<td></td>
</tr>
<tr>
<td>Sync Device’s Recording Settings to Device</td>
<td></td>
</tr>
<tr>
<td>Sync Floor Name from Device to System</td>
<td></td>
</tr>
<tr>
<td>Sync Floor Name from System to Device</td>
<td></td>
</tr>
<tr>
<td>Synchronize Camera Name</td>
<td></td>
</tr>
<tr>
<td>Synchronize Domain Users</td>
<td></td>
</tr>
<tr>
<td>Synchronize Door Name</td>
<td></td>
</tr>
<tr>
<td>Synchronize Partition</td>
<td></td>
</tr>
<tr>
<td>SYS Stopped</td>
<td></td>
</tr>
<tr>
<td>System Settings on Control Client</td>
<td></td>
</tr>
<tr>
<td>Temporary Access</td>
<td></td>
</tr>
<tr>
<td>Test Alarm Configuration</td>
<td></td>
</tr>
<tr>
<td>Test Event Rule</td>
<td></td>
</tr>
<tr>
<td>Transcoding Playback</td>
<td></td>
</tr>
<tr>
<td>Trigger User-Defined Event</td>
<td></td>
</tr>
<tr>
<td>Turn off Alarm Output</td>
<td></td>
</tr>
<tr>
<td>Turn off Screen</td>
<td></td>
</tr>
<tr>
<td>Turn on Alarm Output</td>
<td></td>
</tr>
<tr>
<td>Turn on Screen</td>
<td></td>
</tr>
<tr>
<td>Two-Way Audio in Live View</td>
<td></td>
</tr>
<tr>
<td>Deactivate License</td>
<td></td>
</tr>
<tr>
<td>Unlink Decoding Output</td>
<td></td>
</tr>
<tr>
<td>Unlink Dock Station Group with Dock Station</td>
<td></td>
</tr>
</tbody>
</table>
4.2 Device Logs
Log information on Encoding Device and Security Control Device are searchable by major type and corresponding minor types:

### 4.2.1 Encoding Device Logs - Alarm
The Alarm Log shall be searchable by the following subcategories

<table>
<thead>
<tr>
<th>Alarm Input</th>
<th>Alarm Output</th>
<th>Answering Question Detection Started</th>
<th>Answering Question Detection Stopped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Exception Detection</td>
<td>Audio Loss Detection</td>
<td>Audio Loss Detection Started</td>
<td>Audio Loss Detection Stopped</td>
</tr>
<tr>
<td>Defocus Detection Started</td>
<td>Defocus Detection Stopped</td>
<td>Digital Channel Alarm Input Started</td>
<td>Digital Channel Alarm Input Stopped</td>
</tr>
<tr>
<td>Emergency Alarm Started</td>
<td>Emergency Alarm Stopped</td>
<td>Face Detection Alarm Started</td>
<td>Face Detection Alarm Stopped</td>
</tr>
<tr>
<td>Face Detection Started</td>
<td>Face Detection Stopped</td>
<td>Fast Moving Detection Started</td>
<td>Fast Moving Detection Stopped</td>
</tr>
<tr>
<td>Fire and Smoke Detection Ended</td>
<td>Fire and Smoke Detection Started</td>
<td>Intrusion Detection Started</td>
<td>Intrusion Detection Stopped</td>
</tr>
<tr>
<td>ITS Alarm Started</td>
<td>ITS Alarm Stopped</td>
<td>Lecture Detection Alarm Started</td>
<td>Lecture Detection Alarm Stopped</td>
</tr>
<tr>
<td>License Plate Recognition Started</td>
<td>License Plate Recognition Stopped</td>
<td>Line Crossing Detection Started</td>
<td>Line Crossing Detection Stopped</td>
</tr>
<tr>
<td>Loitering Detection Alarm Started</td>
<td>Loitering Detection Alarm Stopped</td>
<td>Motion Detection Alarm Started</td>
<td>Motion Detection Alarm Stopped</td>
</tr>
<tr>
<td>Parking Detection Alarm Stopped</td>
<td>People Gathering Alarm Started</td>
<td>People Gathering Alarm Stopped</td>
<td>PIR Alarm started</td>
</tr>
<tr>
<td>PIR Alarm stopped</td>
<td>POS Started</td>
<td>POS Stopped</td>
<td>Region Entrance</td>
</tr>
</tbody>
</table>
### Detection Started

<table>
<thead>
<tr>
<th>Region Entrance Detection Stopped</th>
<th>Region Exiting Detection Started</th>
<th>Region Exiting Detection Alarm Stopped</th>
<th>Scene Change Detection Alarm Started</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Scene Change Detection Alarm Stopped</th>
<th>Scene Detection Alarm</th>
<th>Ship Detection</th>
<th>Sudden Change of Sound Intensity Started</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Sudden Change of Sound Intensity Stopped</th>
<th>Sudden Decrease of Sound Intensity Detection</th>
<th>Temperature Difference Alarm Started</th>
<th>Temperature Difference Alarm Stopped</th>
</tr>
</thead>
</table>

|---------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------|

|-------------------------------------------|-------------------------------------------|-----------------------------|----------------------------|

<table>
<thead>
<tr>
<th>VCA Alarm Started</th>
<th>VCA Alarm Stopped</th>
<th>Video Tampering Alarm Started</th>
<th>Video Tampering Alarm Stopped</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>VQD Alarm Started</th>
<th>VQD Alarm Stopped</th>
<th>Wireless Alarm Started</th>
<th>Wireless Alarm Ended</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other</th>
</tr>
</thead>
</table>

### 4.2.2 Encoding Device Logs – Exception

The Exception Log shall be searchable by the following subcategories

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

### 4.2.3 Encoding Device Logs – Operation

The Operation Log shall be searchable by the following subcategories

<table>
<thead>
<tr>
<th>Add Plan</th>
<th>Add Scene</th>
<th>Add Signal Source</th>
<th>Adjust Volume</th>
</tr>
</thead>
</table>

95
<table>
<thead>
<tr>
<th>Action</th>
<th>Action</th>
<th>Action</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bring Video Wall Window to Back</td>
<td>Bring Video Wall Window to Front</td>
<td>Cancel Master Screen of Video Wall</td>
<td>Cancel Slave Screen of Video Wall</td>
</tr>
<tr>
<td>Control Decoding Channel Ratio</td>
<td>Control Digital Zoom</td>
<td>Control Online by Dialing</td>
<td>Control Online/Offline by Short Message</td>
</tr>
<tr>
<td>Control Passive Decoding</td>
<td>Control Plan</td>
<td>Control Remote Playback</td>
<td>Cut Background Picture</td>
</tr>
<tr>
<td>Cut Video Source</td>
<td>Delete Plan</td>
<td>Delete Scene</td>
<td>Delete Signal Source</td>
</tr>
<tr>
<td>Display Logo</td>
<td>Display Operation</td>
<td>Download Background Picture</td>
<td>Edit Input</td>
</tr>
<tr>
<td>Edit Output</td>
<td>Edit Signal Source</td>
<td>Edit Virtual LED</td>
<td>Get All Valid Windows</td>
</tr>
<tr>
<td>Get Auto-Switch Plan</td>
<td>Get Current Used Scene</td>
<td>Get Decoder Auto-Switch Settings</td>
<td>Get Decoding Board Parameters</td>
</tr>
<tr>
<td>Get Decoding Channel Information</td>
<td>Get Decoding Channel Status</td>
<td>Get Decoding Channel Switch</td>
<td>Get Device Information</td>
</tr>
<tr>
<td>Get Display Channel Settings</td>
<td>Get Input Signal List</td>
<td>Get Plan List</td>
<td>Get Scene</td>
</tr>
<tr>
<td>Get Scene List</td>
<td>Get Signal Window Information</td>
<td>Get Status of Remote Playback</td>
<td>Get User Configuration</td>
</tr>
<tr>
<td>Get Video Wall Connection</td>
<td>Get Video Wall Scene</td>
<td>Get Virtual LED</td>
<td>Hide Logo</td>
</tr>
<tr>
<td>Illegal Shutdown</td>
<td>Local: Activate Device</td>
<td>Local: Add Network Camera</td>
<td>Local: Add Network HDD</td>
</tr>
<tr>
<td>Local: Add Working Device</td>
<td>Local: Auto-Restore</td>
<td>Local: Backup End Time</td>
<td>Local: Backup Record File(s)</td>
</tr>
<tr>
<td>Local: Configuration</td>
<td>Local: Configure PIN</td>
<td>Local: Configure SIP Server</td>
<td>Local: Create Array</td>
</tr>
<tr>
<td>Local: Create Logical Disk</td>
<td>Local: Delete Array</td>
<td>Local: Delete HDD</td>
<td>Local: Delete Logical Disk</td>
</tr>
<tr>
<td>Local: Delete Network Camera</td>
<td>Local: Delete Network HDD</td>
<td>Local: Delete Working Device</td>
<td>Local: Device Type Configuration</td>
</tr>
<tr>
<td>Local: Disable Wireless Dial-up</td>
<td>Local: Expand Logical Disk</td>
<td>Local: Expand Blacklist &amp; Whitelist</td>
<td>Local: Export Configuration File</td>
</tr>
<tr>
<td>Local: Format HDD</td>
<td>Local: HDD Detect</td>
<td>Local: Hot Spare Device Configuration</td>
<td>Local: Hot Standby</td>
</tr>
<tr>
<td>Local: Import Blacklist &amp; Whitelist</td>
<td>Local: Import Configuration File</td>
<td>Local: Import IPC Configuration File</td>
<td>Local: Live View</td>
</tr>
<tr>
<td>Local: Lock Video Files</td>
<td>Local: Logout</td>
<td>Local: Manual Clear or Trigger Alarm</td>
<td>Local: Manual Rebuild Array</td>
</tr>
<tr>
<td>Local: Move Array</td>
<td>Local: N+1 Configuration</td>
<td>Local: One-touch Configuration</td>
<td>Local: Operate Tag</td>
</tr>
<tr>
<td>Local: Output Switch</td>
<td>Local: Playback By File</td>
<td>Local: Playback By Time</td>
<td>Local: PTZ Control</td>
</tr>
<tr>
<td>Local: Reboot</td>
<td>Local: Reset Admin’s Password</td>
<td>Local: Restore Logical Disk</td>
<td>Local: Restore to Factory Settings</td>
</tr>
<tr>
<td>Local: Resume Default Admin</td>
<td>Local: Search Message</td>
<td>Local: Send Message</td>
<td>Local: Set Dial-up Parameters</td>
</tr>
<tr>
<td>Password</td>
<td>Local: Set Dial-up Plan</td>
<td>Local: Set Network HDD</td>
<td>Local: Set RAID Speed</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Local: Setting Network Camera</td>
<td>Local: Start Backup</td>
<td>Local: Start Burning</td>
<td>Local: Start Capture</td>
</tr>
<tr>
<td>Local: Start Recording</td>
<td>Local: Stop Backup</td>
<td>Local: Stop Capture</td>
<td>Local: Stop Recording</td>
</tr>
<tr>
<td>Local: Switch Output</td>
<td>Local: Time Settings</td>
<td>Local: Unlock Video Files</td>
<td>Local: Upgrade</td>
</tr>
<tr>
<td>Local: Upgrade IPC</td>
<td>Local: Upgrade RAID</td>
<td>Local: View Message</td>
<td>MVC: Login Code Splitter</td>
</tr>
<tr>
<td>MVC: Logout Code Splitter</td>
<td>Platform Operation</td>
<td>Power On</td>
<td>Reboot Intelligent Library</td>
</tr>
<tr>
<td>Remote: Configure SIP Server</td>
<td>Remote: Create Array</td>
<td>Remote: Create Logical Disk</td>
<td>Remote: Delete Array</td>
</tr>
<tr>
<td>Remote: Playback by Time</td>
<td>Remote: PTZ Control</td>
<td>Remote: Reboot</td>
<td>Remote: Reset admin’s Password</td>
</tr>
<tr>
<td>Remote: Send Message</td>
<td>Remote: Set Dial-up Parameters</td>
<td>Remote: Set Dial-up Plan</td>
<td>Remote: Set NAS Speed</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Remote: Upgrade RAID</td>
<td>Remote: View Message</td>
<td>Restore Initial Status</td>
<td>Scene Control</td>
</tr>
<tr>
<td>Screen Control</td>
<td>Send Alarm Message</td>
<td>Send Auto-Switch Plan</td>
<td>Set Background Picture</td>
</tr>
<tr>
<td>Set Decoder Auto-Switch Settings</td>
<td>Set Decoding Board Parameters</td>
<td>Set Decoding Channel Switch</td>
<td>Set Decoding Delay Level</td>
</tr>
<tr>
<td>Set Display Channel</td>
<td>Set External Matrix</td>
<td>Set Master Screen of Video Wall</td>
<td>Set OSD</td>
</tr>
<tr>
<td>Set Output Resolution</td>
<td>Set Remote Playback</td>
<td>Set Single Scene</td>
<td>Set Slave Screen of Video Wall</td>
</tr>
<tr>
<td>Set Transparency</td>
<td>Set Two-way Audio Record</td>
<td>Set User Configuration</td>
<td>Set User Password</td>
</tr>
<tr>
<td>Set Video Wall Connection</td>
<td>Set Video Wall Scene</td>
<td>Shutdown</td>
<td>Start Auto-Switch Decoding</td>
</tr>
<tr>
<td>Start Dynamic Decoding</td>
<td>Start Passive Decoding</td>
<td>Start PPPoE Connection</td>
<td>Stop Auto-Switch Decoding</td>
</tr>
<tr>
<td>Stop Dynamic Decoding</td>
<td>Stop Passive Decoding</td>
<td>Stop PPPoE Connection</td>
<td>Stream Compression Configuration</td>
</tr>
<tr>
<td>Switch Scene</td>
<td>Upload Background Picture</td>
<td>Upload Logo</td>
<td>VCA Configuration</td>
</tr>
<tr>
<td>Video Wall Display Area Setup</td>
<td>Window Control</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.4 Encoding Device Logs - Information

The Information Log shall be searchable by the following subcategories

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

<table>
<thead>
<tr>
<th>Exception Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabling DSP Failed</td>
</tr>
<tr>
<td>Smart Rule Not Supported</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

### 4.2.6 Decoding Device Logs - Operation

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

4.3 Security Control Device Log

4.3.1 Security Control Device Logs - Alarm

The Alarm Log shall be searchable by the following subcategories

<table>
<thead>
<tr>
<th>Alarm Reset</th>
<th>Alarm Restored</th>
<th>Business Consulting</th>
<th>Business Consulting Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detector Restored</td>
<td>Detector Tampered</td>
<td>Device Restored</td>
<td>Device Tampered</td>
</tr>
<tr>
<td>Dust Detector Alarm</td>
<td>Dust Detector Alarm</td>
<td>Electricity Meter Alarm</td>
<td>Electricity Meter Alarm Restored</td>
</tr>
<tr>
<td>Environment Acquisition Device Alarm</td>
<td>Environment Acquisition Device Alarm Restored</td>
<td>Gas Detection Alarm</td>
<td>Gas Detection Alarm Restored</td>
</tr>
<tr>
<td>Incorrect Password Attempts</td>
<td>Invalid Card ID</td>
<td>Keypad Restored</td>
<td>Keypad Tampered</td>
</tr>
<tr>
<td>Motion Detection Alarm Started</td>
<td>Motion Detection Alarm Stopped</td>
<td>Open-Circuit Alarm</td>
<td>Panic Alarm</td>
</tr>
<tr>
<td>Panic Alarm Restored</td>
<td>Panic Button Pressed</td>
<td>Panic Button Restored</td>
<td>Power Supply On/Off</td>
</tr>
<tr>
<td>Down</td>
<td>Alarm</td>
<td>Alarm</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Power Supply On/Off Alarm Restored</td>
<td>Sensor Higher than Threshold 1</td>
<td>Sensor Higher than Threshold 2</td>
<td>Sensor Higher than Threshold 3</td>
</tr>
<tr>
<td>Sensor Higher than Threshold 4</td>
<td>Sensor Lower than Threshold 1</td>
<td>Sensor Lower than Threshold 2</td>
<td>Sensor Lower than Threshold 3</td>
</tr>
<tr>
<td>Sensor Lower than Threshold 4</td>
<td>Short-Circuit Alarm</td>
<td>Temperature-Humidity Sensor Alarm</td>
<td>Temperature-Humidity Sensor Alarm Restored</td>
</tr>
<tr>
<td>Transformer Temperature Alarm</td>
<td>Transformer Temperature Alarm Restored</td>
<td>UPS Alarm</td>
<td>UPS Alarm Restored</td>
</tr>
<tr>
<td>Video Tampering Alarm Started</td>
<td>Video Tampering Alarm Stopped</td>
<td>Virtual Zone Burglary Alarm</td>
<td>Virtual Zone Fire Alarm</td>
</tr>
<tr>
<td>Virtual Zone Panic Alarm</td>
<td>Water Level Sensor Alarm</td>
<td>Water Level Sensor Alarm Restored</td>
<td>Zone Module Restored</td>
</tr>
<tr>
<td>Zone Module Tampered</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.3.2 Security Control Device Logs - Exception

The Exception Log shall be searchable by the following subcategories

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

The Operation Log shall be searchable by the following subcategories:

<table>
<thead>
<tr>
<th>Add Administrator</th>
<th>Add Back-End Operator</th>
<th>Add Detector to Zone</th>
<th>Add Front-End Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Keyfob User</td>
<td>Add Keyfob/Card Reader User</td>
<td>Audio Off</td>
<td>Audio On</td>
</tr>
<tr>
<td>Auto Arming</td>
<td>Auto Disarming</td>
<td>Bypass</td>
<td>Bypass Recovered</td>
</tr>
<tr>
<td>Capture Settings</td>
<td>Card Arming/Disarming</td>
<td>Card Settings</td>
<td>Change Administrator’s Password</td>
</tr>
<tr>
<td>Change Back-End Operator’s Password</td>
<td>Change Front-End Operator’s Password</td>
<td>Check Detector Battery</td>
<td>Check Detector Signal</td>
</tr>
<tr>
<td>Clear Alarms</td>
<td>Close Door</td>
<td>Control Trigger</td>
<td>DDNS Settings</td>
</tr>
<tr>
<td>Delete Administrator</td>
<td>Delete Back-End Operator</td>
<td>Delete Detector from Zone</td>
<td>Delete Front-End Operator</td>
</tr>
<tr>
<td>Delete Keyfob User</td>
<td>Delete Keyfob/Card Reader User</td>
<td>Detector Arming</td>
<td>Detector Disarming</td>
</tr>
<tr>
<td>Disable Function Key</td>
<td>Disable Siren</td>
<td>Duress</td>
<td>Edit 3G Parameters</td>
</tr>
<tr>
<td>Edit Access Control Parameters</td>
<td>Edit Dialing Settings</td>
<td>Edit Event Trigger Action Settings</td>
<td>Edit GPRS Parameters</td>
</tr>
<tr>
<td>Edit Network Uploading Parameters</td>
<td>Edit Partition System Parameters</td>
<td>Edit Print Parameters</td>
<td>Edit RS-485 Settings</td>
</tr>
<tr>
<td>Edit Security Control Panel Settings</td>
<td>Edit Sensor Settings</td>
<td>Edit System Fault Settings</td>
<td>Edit Trigger Settings</td>
</tr>
<tr>
<td>Edit Uploading Mode Settings</td>
<td>Edit Zone Settings</td>
<td>Enable Function Key</td>
<td>Enable Siren</td>
</tr>
<tr>
<td>Expanded Network Center Settings</td>
<td>Format SD Card</td>
<td>Group Bypass</td>
<td>Group Bypass Recovered</td>
</tr>
<tr>
<td>HiDDNS Settings</td>
<td>Instant Arming</td>
<td>Key Arming/Disarming Zone Arming</td>
<td>Key Arming/Disarming Zone Disarming</td>
</tr>
<tr>
<td>Local: Activate Device</td>
<td>Local: Lock</td>
<td>Local: Reboot</td>
<td>Local: Restore to Factory Settings</td>
</tr>
<tr>
<td>Local: Unlock</td>
<td>Local: Upgrade</td>
<td>Mobile Phone Alarm Clearing</td>
<td>Mobile Phone Arming</td>
</tr>
<tr>
<td>Mobile Phone Disarming</td>
<td>Mobile Phone Instant Arming</td>
<td>Mobile Phone Stay Arming</td>
<td>Network Card Settings</td>
</tr>
<tr>
<td>Network Module Settings</td>
<td>Normal Arming</td>
<td>Normal Disarming</td>
<td>One-Touch Away Arming</td>
</tr>
<tr>
<td>One-Touch Stay Arming</td>
<td>Open Door</td>
<td>Re-register External Module</td>
<td>Remote Arming</td>
</tr>
</tbody>
</table>

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### Remote: Lock File
- Remote: Playback by File
- Remote: Playback by Time
- Remote: PTZ Control

### Remote: Reboot
- Remote: Restore to Factory Settings
- Remote: Start Recording
- Remote: Stop Recording

### 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
- Remote: Start Recording
- Remote: Stop Recording

### Remote: Start Recording
- Remote: Stop Recording

### 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: Reboot
- Remote: Restore to Factory Settings
- Remote: Start Recording
- Remote: Stop Recording

### Remote: User Login
- Remote: User Logout
- Remote: Start Recording
- Remote: Stop Recording

### 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

### 4.3.4 Security Control Device Logs – Event
The Event Log shall be searchable by the following subcategories

<table>
<thead>
<tr>
<th>Activating Trigger Failed</th>
<th>Auto Arming</th>
<th>Auto Arming Failed</th>
<th>Auto Disarming</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Code Time Synchronization</td>
<td>Deactivating Trigger Failed</td>
<td>Disable Trigger by Schedule</td>
<td></td>
</tr>
<tr>
<td>Forced Arming</td>
<td>Insert USB</td>
<td>Keypad Locked</td>
<td></td>
</tr>
<tr>
<td>Scheduled Synchronization</td>
<td>SDK Time Synchronization</td>
<td>Sub-board Plug In</td>
<td></td>
</tr>
<tr>
<td>Sub-board Pull Out</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>