Commercial Building Integrated Security Solution
1. Vertical Requirements Analysis
2. System Architecture
3. Solution Application
4. Successful Cases
Requirement Analysis

Personnel Safety
- Protecting the safety of employees' lives and property;
- Preventing illegal persons and vehicles from intruding;
- Evidence collection after Personnel dispute.

Property Safety
- Protecting Key Facilities of Enterprises;
- Protecting restricted regions;
- Prevention of theft and sabotage;
- Transforming post-inquiry into pre-warning.

Internal Management
- Standardized personnel management;
- Standardized vehicle management;
- Information-based management.
Hikvision Building Security System Solution

- Different vendor for different Subsystems
- Complicated Operation and Troubleshooting
- High Maintenance Cost
- No verticalized Feature
- No Inter-system Linkage
- High Integration Cost
- Access Control
- Entrance & Exit
- Turnstile Control
- Surveillance System
- Alarm System

HikCentral
1 Vertical Requirements Analysis
2 System Architecture
3 Solution Application
4 Successful Cases
Solution Architecture

- Access Control
  - Traditional Access Control
  - ANPR
  - UVSS
- Intelligent Application
  - People Counting
  - Heatmap
  - Perimeter intrusion detection

- Entrance & Exit
  - ANPR
  - UVSS

- Alarm System
  - Alarm Panel
  - Panic Alarm
  - Box Panic
  - Pole Panic
  - ANPR Camera
  - UVSS

- Monitoring Center
  - Unified Management
  - Smart Wall
  - Alarm Management
  - Maintenance

- Video Surveillance
  - Hybrid SAN
  - pStor
  - Cluster Storage
  - IPC
  - IPD
  - PanoVu
  - Thermal
  - Heatmap
  - People Counting

- Access Control
  - Access Controller
  - Card Reader
  - Fingerprint Reader
  - Lock
  - Exit Button

- Alarm System
  - Alarm Panel
  - Panic Alarm Station
  - Box Panic Station
  - Pole Panic Alarm

- Entrance & Exit Control
  - NVR
  - ANPR Camera
  - UVSS

- HikCentral
  - Control Client
  - Mobile Client
  - Keyboard

- Monitoring Wall
  - Video Wall
  - Decoder
  - Mobile Client
  - LAN

- pStor
  - Cluster Storage

- Video Surveillance
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Application scenario: 1) Perimeters; 2) The places has many false alarms. Based on the device which supports the false alarm filter feature, there are two solutions including IPC based and NVR/DVR based.
Perimeter - Scenario 1 Upgrade Projects

1) Reuse the existing IPC and still configure the alarm in IPC.

(2) Deploy the new deepinMind NVR to support this feature for false alarm filter.

Application Scenario:
- Deploy the deepinMind NVR and reuse the existing IPC.
- Configure the alarm in IPC and realize the feature of false alarm filter in NVR.
- Cost-effective, high accuracy intrusion and line crossing detection alarm, a nice perimeter solution that helps keeping a yard safe.

Product | Recommended Model
--- | ---
DeepinMind NVR | iDS-9632NXI-I8/16S
| iDS-7716NXI-I4/8S
Perimeter - Scenario 2 New Projects

Application Scenario
- Configure the alarm and realize the feature by IPC directly.
- High accuracy intrusion and line crossing detection alarm, excellent video/picture quality with more detail, even it is at night.

Product
<table>
<thead>
<tr>
<th>DeepinView IP Camera/IP Dome</th>
<th>DS-2CD7A26G0-IZ(H)S(2.8~12mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVR</td>
<td>K series/ I series</td>
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(1) Filter the false alarm by front-end IPC directly.
(2) Normal NVR is proposed.
Perimeter - **Thermal** Alarm System

- **Environmental Suitability**: Adapt to poor environment such as darkness, strong or back light, fog and haze.
- **Concealed Detection**: Easier to find suspects, effectively detect and see hidden objects among darkness or in the grass.
- **Ultra Detection**: Compared to optical camera, thermal has much longer detection distance.
- **High Alarm Accuracy**: Provide 7 x 24 online real time alarm with high accuracy.
For thermal cameras sense the tiny differences in heat, it can adapt to poor environment conditions such as darkness, strong or back light, fog and haze.

- Thermal can effectively detect hidden objects in the dark or in the grass, so that suspects would be easy to find.
- Compared to optical camera, thermal not only can discover the hidden object in the woods, but also provides much longer detection distance.
- Compared to optical camera, thermal provides higher alarm accuracy (Rules: Intrusion detection, line crossing).
- Application scenario: 1) long perimeters; 2) Night without light supplement; 3) Hidden object with trees and botany.

Environmental Suitability

Concealed Detection

Ultra Detection
Deep learning algorithm

Significantly reduce false alarms caused by animals, camera shaking, grasses or other irrelevant objects with higher precision.
Entrance & Exit

ANPR Monitoring Scene

High Security Scene
Entrance & Exit - ANPR Recording

- Automatic Plate Number Recognition & Recording
- Vehicle List Management
- Blacklist Warning & VIP List Notification
- History Search & Report Export
Entrance & Exit - **ANPR Recording - System Architecture**

1. Vehicle passing video/image can be stored in local NVR or central storage.

   - Hybrid SAN/pStor/Cluster Storage
   - BS/CS Client
   - Mobile Client
   - HikCentral Server

2. If customer don’t require video recording, ANPR camera can work alone without NVR or central storage.

- **ANR (Automatic Network Replenishment) function**: If the network between NVR and the central are interrupted, the NVR can transmit data during the network disconnection to the center after the network is restored.
Entrance & Exit - ANPR Recording - Platform

List management
• Add one by one
• Batch import
• Batch export

License Plate Number | Owner | Phone
--- | --- | ---
AS157886L | Aaron | 88456784
F977819ST | Page | 99254938
NMP25Q27 | Jeffrey | 51024684

List warning
• Blacklist
• Whitelist
• ……

Quickly add suspicious vehicle to blacklist

Create list

ANPR recognition display

Record search

Quick item linkage to vehicle list for detailed information
Generate report of vehicles passing number in each location during different time periods
- Display the overall number from multiple locations
- Export statistics of vehicle analysis report
**Entrance & Exit - High Security Scene**

- Automatically detect the vehicle bottom
- Synchronize LPR camera data with Under Vehicle picture
- Suitable for various vehicle models, whole bottom of vehicle in one picture
- High-strength structure
- High-quality picture, low distortion
Entrance & Exit - High Security Scene - UVSS System

- HikCentral Server
- BS/CS Client
- Mobile Client
- Hybrid SAN/pStor/Cloud Storage
- Switch
- Camera
- ANPR Camera
- UVSS System

Max. 4 UVSS

1. Sensing Coil
2. Speed Matching Module
3. Line Scan Camera
4. LED Lighting
5. Control Cabinet
Entrance & Exit - High Security Scene - Platform

- Import standard vehicle chassis picture as original picture
- Overall view of the vehicle
- Tagging suspicious area
- Live picture of vehicle chassis
- Live view & operations
- Record search

- List warning (blacklist, whitelist...)
- Quickly add suspicious vehicle to blacklist
- Quick item linkage to vehicle list for detailed information
- Quick history search for better live view investigation
- Search for history record
- Export record
Outdoor & Indoor Area – Video Surveillance

Various scenarios, indoor and outdoor.
Round the clock, day and night.
Outdoor & Indoor Area - Alarm Panel System - System Topology
For different customers, the business of alarm handling is different. The mobile app is the key tool to help the local engineers to check and acknowledge the event in his store/branch real-time.

HQ Security Engineers
Center:
- Device Management
- Parameters Configuration/Strategy Making
- Arm/Disarm
- Alarm Handle/Verification/Acknowledge
- Remote Control
- Etc.

Branch Security Manager
Remote HikCentral App:
- Receive Alarm
- Alarm Acknowledge

Branch Security Engineer
Local:
- Arm/Disarm
- Emergency
- Remote Control
Intruder verification is the key requirement of the control center in the system and is the key advantage of the IVaaS to save the man resource.

Alarm Panel solution supports the platform linkage and hardware linkage to help the control room or clients to check the event picture, event recording and etc..

Configure the linkage such as event recording, event picture, send email or pop-up image by iVMS.

All in one video alarm panel realizes the linkage by hardware linkage directly.
Outdoor & Indoor Area - Emergency Alarm System - Business Flow

- **Outdoor & Indoor Area**
  - **Emergency Alarm System**
    - **Business Flow**
      - **Trigger PTZ**
      - **Two-way audio**
      - **Lamp linkage**
      - **Siren linkage**

- **LAN Center**
  - **Two-way audio**
  - **Alarm acknowledge**
  - **Audio verification and record**
  - **Video verification and record**
Office Area

Access & Attendance Control
NOTE: HikCentral can integrate HID Wiegand reader by user-defined Wiegand protocol (need to get the protocol format).
Suitable Scenarios: Accessing door points without personnel authentication

- Employees or residents without card authentication;
- Visitors from outside;
- Access points with high security level.

The person who has no authentication to pass the door point can make a far call by pressing the calling button on access controller’s panel to the security personnel in control center, the security personnel will confirm this person’s identification via live video and two-way audio from the access controller, then open the door in control center remotely for this person after this person’s identification is confirmed.

NOTE: Administrator in control center can open all doors via one-key control on control client.
Office Area - **Advanced Application**

Give a high security level that only one door can be opened at the same time.

Prevent multiple people from using the same card to open the door.

Two functions: Remain Unlocked or Authorization.

Variety of linkage actions for access control system.

Person number statistic based on the region enclosed by doors.

**Anti-Passback**

**Multi-Interlocking**

**First Card Linkage**

**Entry Exit Counting**

**System Linkage**
### Manual Attendance

- High human force cost
- Inaccurate paper work
- Difficult to search for and edit of history record

### HikCentral Automatic Attendance

- Attendance by card and fingerprint;
- Automatic attendance reports generating and exporting to save human force cost;
- Much more accurate than human paper work;
- Easy search and edit of history record.

- Flexible attendance schedules with week or days cycle for easy management.
- Both fixed-time and flexible-time schedule template and automatic distinguish of lateness, early off and absence to suit different requirements.
- Support holiday schedule.
- Support sending attendance result report to specific recipients automatically by email.
- User-define attendance.
Monitoring Center

Video Demonstration
- Live view and playback on big screen
- Stitching, dividing and roaming
- Alarm pop up
- PC screen projection

Alarm Management
- Alarm generation
- Alarm linkage and generation
- Alarm handling
- Alarm report

Maintenance
- Health monitoring
- Audit trail
Monitoring Center - Video Demonstration

Comprehensive demonstration of video, alarm and map for central data aggregation, command and control.

Video Display
- To have a better view of live video & video files on the Smart Wall.

Alarm Pop-up Display
- Alarm linkage view pops up on the Smart Wall.

PC Screen Projection
- To project local PC screen to the Smart Wall. Typically E-map is used for projecting local PC screen to the Smart Wall.
Monitoring Center - Video Demonstration - Video Display

Smart Wall Application

- Alarm pops up on Smart Wall
- Alarm-related channel pushed to Smart Wall

Windows Operation

- High Brightness
- High Contrast
- Quick Response
- Color Enhancement
- Dynamic Self-Adaptive

Live View

- Single

Playback

- Joint

Alarm Linkage

- Supports adding 32 Smart Walls
- Supports adding 32 decoding devices
- Supports creating coverage
- Supports 3D PTZ operation
- Supports 64 & 69 Series decoding devices
- Supports C10S controller
- Supports displaying detail stream
Recover Strategy:
- An alarm with higher priority happens which has been configured to push to this very division
- Manually acknowledgement
- Lasting time, which is configurable, has been exceeded

Support simultaneous display of multiple alarms.
HikCentral client supports using graphic card to connect to the screen as the smart wall mode.
Monitoring Center - Video Demonstration - Highlight Functions

- Smart Wall Module built-in HikCentral Client

- Shows the on/off status of the Smart Wall monitors
- Shows and configures the brightness/contrast/sharpness of the Smart Wall monitors
- Cameras belonging to the same area can auto switch in a division directly
- Exports and prints corresponding relation between camera number and Smart Wall number

- Supports public view and private view
- Mouse over the resource tree to preview the channel

- Channel Preview
- PTZ Operation
Monitoring Center - Alarm Management - Overview

**Alarm Generation**
- Rich event/alarm resource
- Event Based Alarm
- Generic alarm (3rd party system integration)

**Alarm Linkage and Demonstration**
- Event & Alarm linkage
  1. Trigger recording
  2. Create Tag
  3. Capture picture
  4. Link access point
  5. Related Map
  6. etc.
- Alarm Demonstration
  1. Trigger pop-up windows
  2. Display on video wall
  3. Alarm Escalation
  4. etc.

**Alarm Handling**
- Input description
- Restrict alarm handling time
- Alarm acknowledge
- Answer (emergency alarm)

**Alarm Report**
- Search the history
  Alarm & Event
- Export the history
  alarm
- Unconfirmed alarms statistics
- Unconfirmed alarms keep staying in the alarm center
Specify a user-defined event or an alarm input as the start or end event of the arming schedule. When the user-defined event or alarm input is triggered, the arming schedule will start or end. So it is event based and different from the traditional time schedule based and provide the new alarming method.

**Factory Cases:**
- If Event A is not triggered, Alarm B will not armed.
- Only somebody triggers the event A, then go inside to trigger alarm B, the alarm B will be triggered immediately.
- If some employees stay always in location B, the alarm B will not triggered.
- So the alarm is designed to trigger the defined alarms to avoid the false alarm.
Once the alarm is triggered, **3 pictures** are captured including before alarm, on the alarm and after alarm (Time: 5S~30S) as the content of this alarm and keep it as the evidence (Typical for the low-bandwidth scenario).

This man is standing by the window, so it’s highly probable that he intrudes from the window.

An intrusion detection has been triggered. A man is intruding the office at night time. What is going on? Is he a thief?

This man has entered the manager room, probably searching for valuables. Guard should be sent to the scene immediately!
In control room, all the resource and alarm can be managed centrally. By the video wall, the key channels, the important alarms and the E-map or heal-monitoring module can be displayed in the screen to highlight it. Display the important alarm on the video wall, will remind the security team in control room to check it immediately.

**Video Wall**

- **Smart Wall Client**
  - To live view and playback channels on the big Smart Wall with a better view.
- **Video Display**
  - To display the channels on the video wall.
- **Alarm Linkage pop-up**
  - Alarm linkage view pops up onto the Smart Wall.
- **E-map Projection**
  - To project local PC screen to the Smart Wall. Typically used to show the E-Map.
For the **important alarms** such as emergency alarm in education vertical or intrusion alarm in bank vertical, the alarms **cannot be missed** to avoid the scenarios such as the security sleep or go to toilet. When the alarm is not handled in the set time, another alarm will be triggered to remind other users to check it immediately.
For alarm, all big customers must have internal alarm handling flow (SOP), especially bank and education, where the system is protecting the students personal safety and bank property. The typical flow is introduced as below.

- Alarm Pop-up with relevant information:
  1. Alarm video record
  2. Alarm pictures
  3. Related GIS or map

- The operator takes the action by following the customer internal SOP indication after alarm verification as a real alarm

- Alarm history and statistics database for retrieval and report
The alarm handling flow of the emergency alarm is **different** from the other alarms, as the emergency alarm is always the important alarm meaning there is something bad is happening. The security will check the video and audio both and follow the internal SOP flow to check the alarm and provide the help immediately.

- The lamp and siren are turned on automatically.
- Pop-up windows and other linkage.
- Security checks the video.
- Video recording after the alarm is triggered.
- Security audio intercom.
- Audio recording.
- Control to turn down the lamp and siren.

Call and send the security team nearby immediately.
By the mobile app, all the stakeholders can check the video and alarm anywhere all over the world. For Boss and management team, they can realize the remote store inspection and check the history alarms. For local security engineers, such as store loss prevention manager, he can receive the real-time alarm at night when employees leave the store.
System configuration including FTP, evidence type and etc.

Configure the system parameters of the evidence management in platform.

Video search and create as evidence by client

Local Police uploads the important evidence video to the FTP to backup and to further download at police station

Evidence upload to FTP

Evidence search

Evidence download

If the evidence video is adopted at the incident, police can download it.
How to get awareness of status of the devices in the network for quicker reaction?

1. System health monitoring

2. Real-time status display to check the online/offline issues

3. Rich event/alarm types are supported to help get the real-time notification by client such as server offline, video loss and etc.

Platform provides many ways to check the health monitoring features.
Is there any suspected attempts on the system?

Add device failure: Anyone attempts to add suspect devices to the system?

User log in failure: Any suspect trying to hike into the system?

Features
- Able to search Error / Warning / Info Log
- Able to search logs by multiple select Users / Alarm Types
- Able to fuzzy search by Resource Name
- Able to fuzzy search Alarm Types / Sources
- Provide more detailed info with Description
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-Cover an area of 11 thousand square meters
-120+caremas
-Sino-foreign joint venture
-Intelligent control & management by Hik iVMS for surveillance system, alarm etc.
Successful Cases

GREE, Zhuhai

- Largest enterprise park in Zhuhai
- 350+ cameras, one large TV wall in monitoring center
- Intelligent control & management by Hik iVMS for alarm control, video Surveillance, TV wall, etc.
Thank You