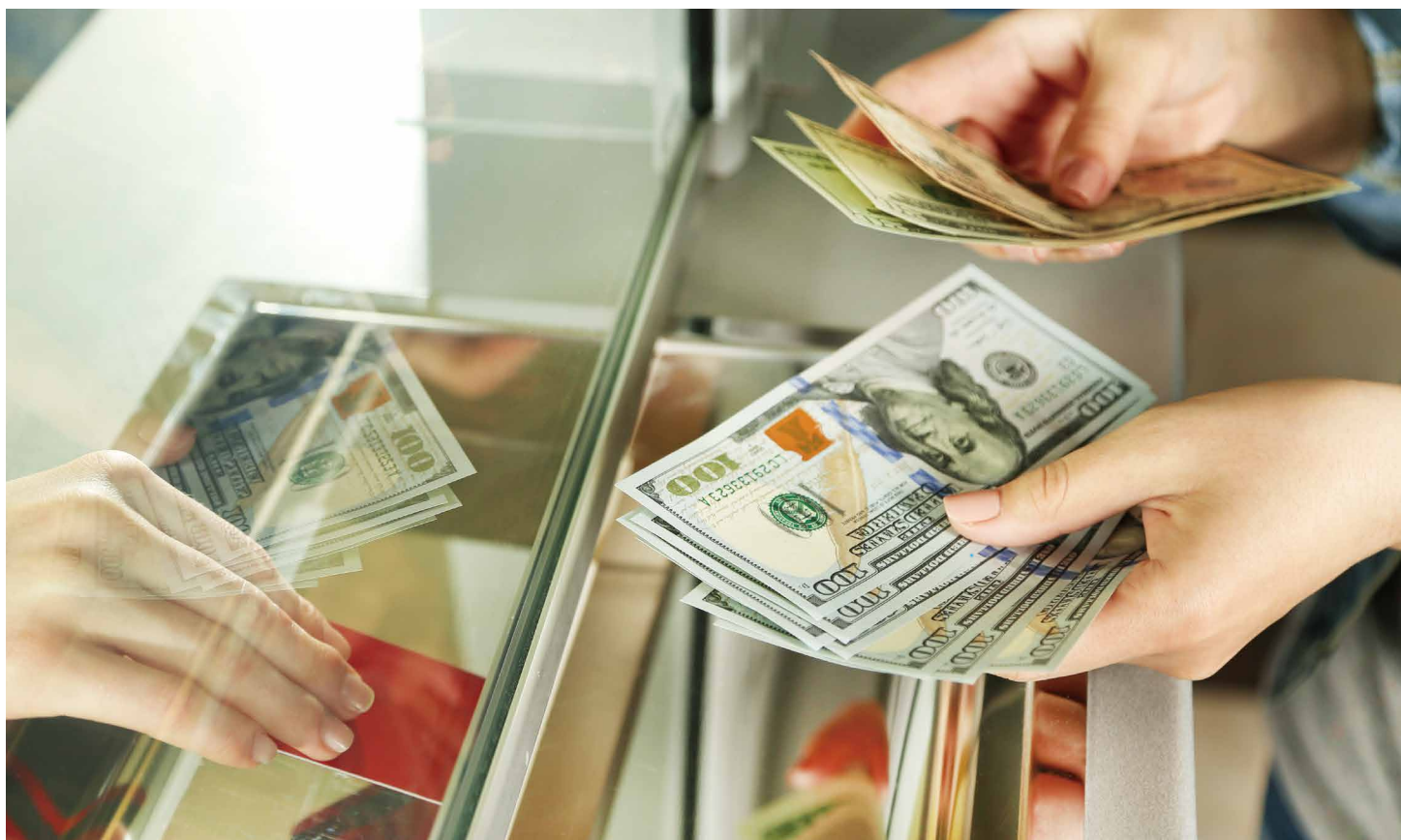


Smart Banking Solution

Building the future banks



Proactive Security



Intelligent Analysis



Business Transformation

BACKGROUND



Digitalization has disrupted banking system. As banking services become more digital, the roles of bank branches are undergoing transformation like never before. In a fiercely competitive and transforming market, along with enhancing security systems, banks are fiercely looking for innovative ways to optimize their branch operation, control non-compliant risks and improve customer satisfaction. As they undergo digital transformation, banks of all sizes are looking for a comprehensive solution that can help them to fight security threats, identify and reduce frauds, prevent business disputes, and improve banks' branch operation efficiency.

With advent of banks' digital transformation, Dahua Technology, a world leading video-centric smart IoT solution and service provider, launches Smart Banking Solution. This Solution is aimed to solve the challenges faced by the banks in security, risk, and operation; and to help banks achieve their goal of security digitalization, secure the banking environment, and improve customer experience.

INDUSTRY CHALLENGES AND SOLUTION

Challenges



Security Issue

- Robbery, theft, vandalism at branch office & ATM premises
- Inadequate proactive incident prevention
- Weak security management system integration



Risk Issues

- Regulatory blind spot caused by non-compliant operation
- High-tech crimes, financial fraud
- Business dispute cases.



Operation Issues

- Legacy business model
- Inefficient marketing methods
- Poor value of services decreasing customer satisfaction

How to address the challenges



Enhance Security

- Early warning of incidents ensuring proactive security.
- Robust ultra HD surveillance guarantees round-the-clock surveillance without any blind spots.
- Integrated security system works in unison providing a state of the art security for your bank.



Control Risks

- Ensuring compliance regulation for bank branch operation.
- Monitor your ATM machines and detect installation of foreign objects to prevent high tech crimes
- Use audio/video recorded conversation between the customers and the teller at cash handling and non-cash handling counters to avoid any potential business dispute cases.



Optimize Business Operation

- Remotely monitor bank branch operation .
- Use customer flow data, demographic data, and regional people counting data for precision marketing and operation decision making.
- Recognize VIP customers and provide exemplary service to improve their banking experience.

SOLUTION OVERVIEW

Counter

- Record Customer-Teller interactions to avoid business disputes
- Monitor customer service satisfaction



ATM

- Protect people and property from external attack
- Remotely assist ATM users in case of emergency

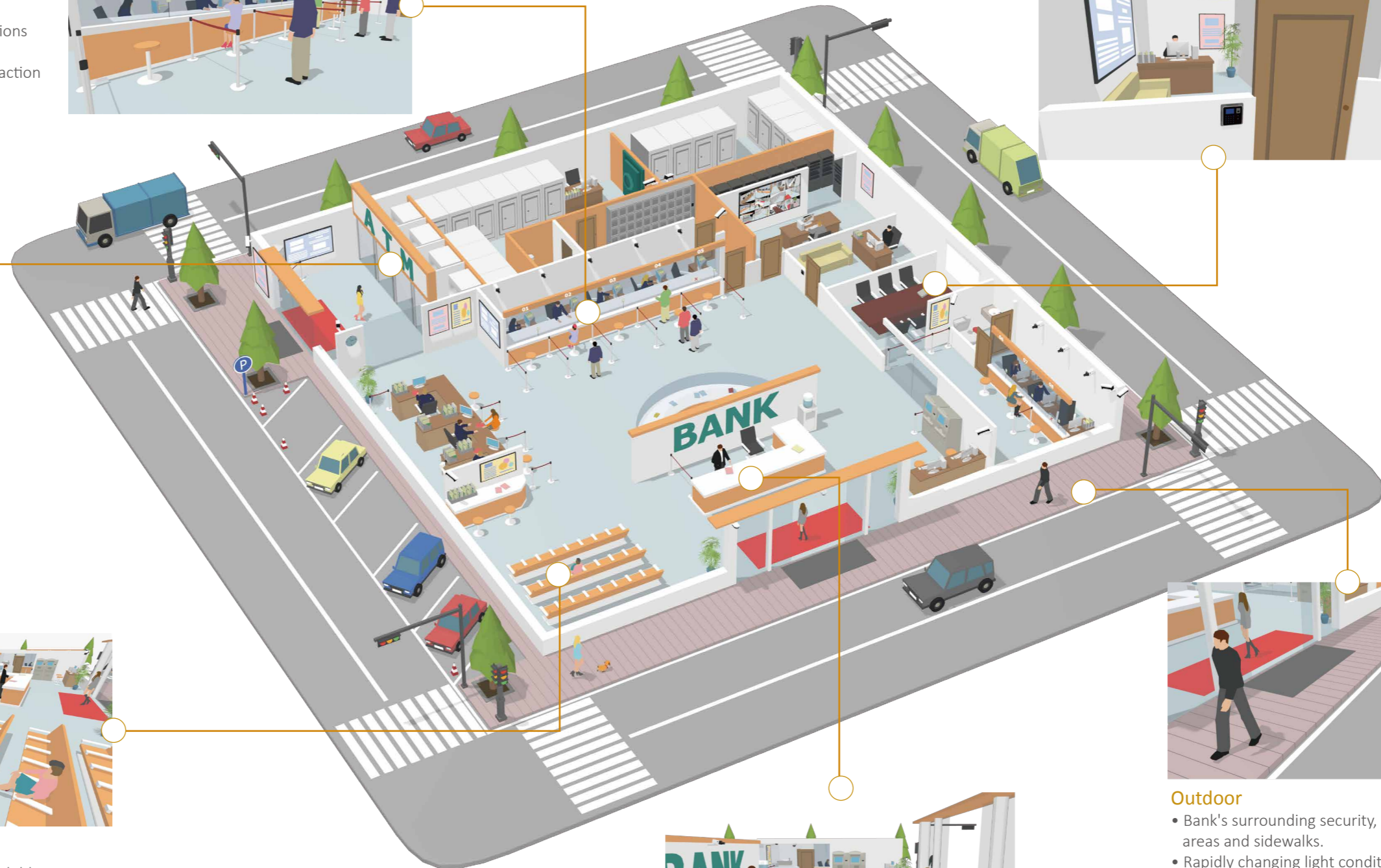
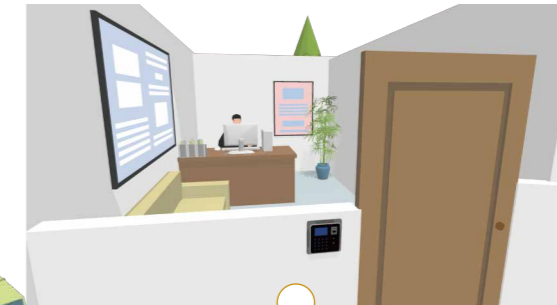


Lobby

- 360 degree monitoring of entire lobby area
- Queue length and time monitoring
- Precision marketing based intelligent ad publishing

Restricted Area

- Entry/Exit log
- High security risk
- Multi-level security authorization



Outdoor

- Bank's surrounding security, including parking areas and sidewalks.
- Rapidly changing light condition requires high-definition, ultra wide range, Starlight technology.



Entrance

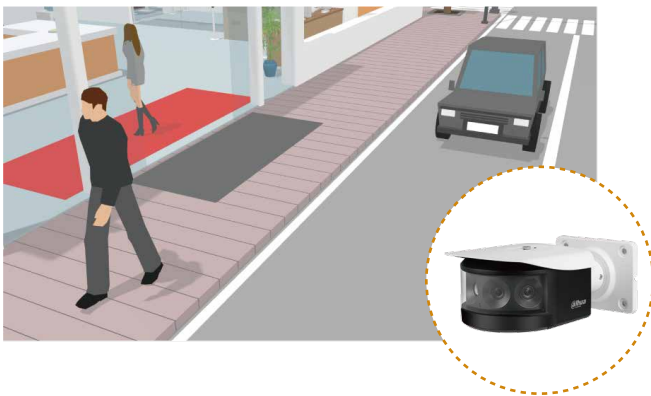
- Facial Recognition
- People counting for branch operation optimization

ENHANCE SECURITY

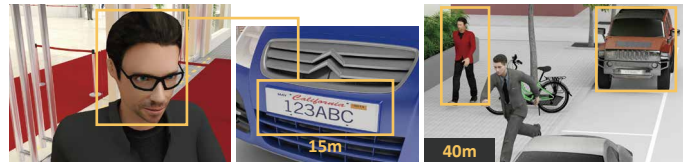
Banks have always been a primary target for criminal activities. Every year, hundreds of banks and ATM machines fall victim to robbery and other forms of threats. Implementing a robust security system is always a top priority in the banking industry.

Application Scenario

Outdoor



- Ensures personnel and property safety with 180* panoramic view outside the bank.
- Detects loitering, vagrancy and tailgating near the bank branch
- Monitors outdoor situation in real-time, and provides a reliable solution for post-incident investigation.
- Supports facial recognition and ANPR upto 15mts.



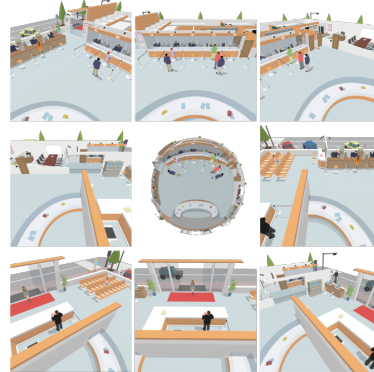
Entrance



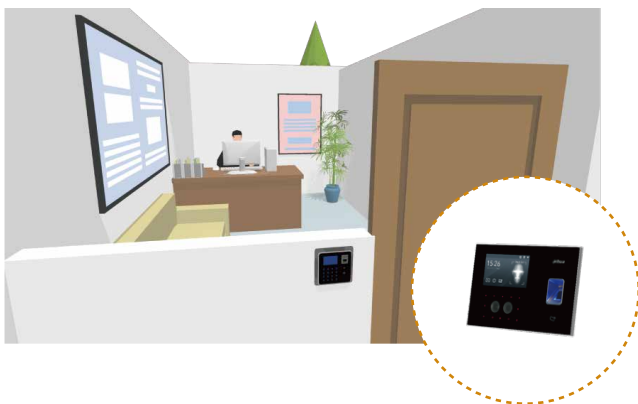
- Offers real-time facial recognition for blacklisted people or suspected criminal.
- When a suspected criminal or a blacklisted person enters the bank premises, the facial recognition camera will trigger an alarm to inform guards.
- Timely alarm can prevent potential threat and strengthen the security of the bank.

Lobby

360-degree real-time monitoring of the lobby area, with features including object detection, area people counting, visitor wait time, and queue management.



Restricted Area



Biometric Access Control & Attendance

- Prevents unauthorized personnel from entering, improving the security of restricted areas.
- Face recognition technology provides strong and convenient access control.
- Visitors' face records can improve management efficiency, which provides information of who accessed the area and for how long.

ATM/Self Banking



Abnormal Behavior Warning

- Detects abnormal behaviors such as following, violence, prolonged stay, falling, etc, which will then send alarms to the management center in order to protect customers and to avoid any incident.
- Tripwire detection, abandoned/moved object detection, people loitering/gathering/queuing/running detection, etc.

Following Detection

Violence Detection

Fall Detection

Timeout Detection

CONTROL RISK

Banks are continuously facing various forms of business risks such as compliance, reputational, etc. To address these issues, banks need to deploy solutions that can avoid business disputes, and protect customers and their assets.

Application Scenario

Branch Office



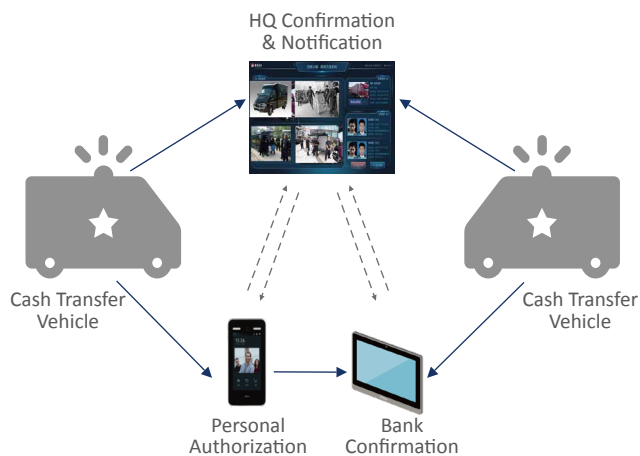
Cash Handling Counter

- High volume of financial transaction every day may cause frequent customer misunderstandings or disputes.
- Window visualization that records the whole business transaction between the teller and customer can effectively avoid disputes.



Non-Cash Handling Counter

- Customer may misunderstand information regarding bank products such as securities, mutual fund retirement policy, loans, etc.
- Recording the whole communication between the teller and customer can avoid business dispute.



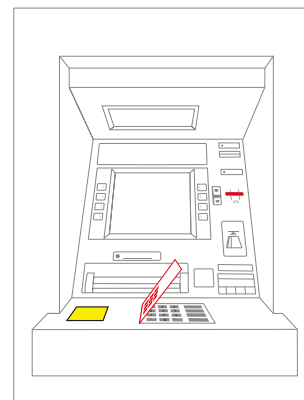
Cash Transfer Vehicle

- Cash transfers between bank branches, as well as ATM cash replenishments, are highly vulnerable to attacks. Our solution provides a multi layered authorization between the branch, cash escort vehicle and HQ.
- Effectively regulates the compliance of outsourced escort companies regarding cash transfer by monitoring every step of the whole process.
- Locates the transfer vehicle with RFID and GPS, and monitors its arrival and departure.

ATM/Self-Banking



- Displays full transaction details, such as transaction amount, time of transaction, card number, ATM location.
- Reviews each transaction with synchronized video snapshots.
- Prevents ATM Transaction frauds, detects various fraudulent transactions and retrieves video evidence in case of disputes.



Fake Card Slot & Fake
Keyboard installation
detection

Unattended object detection in
the area of operation

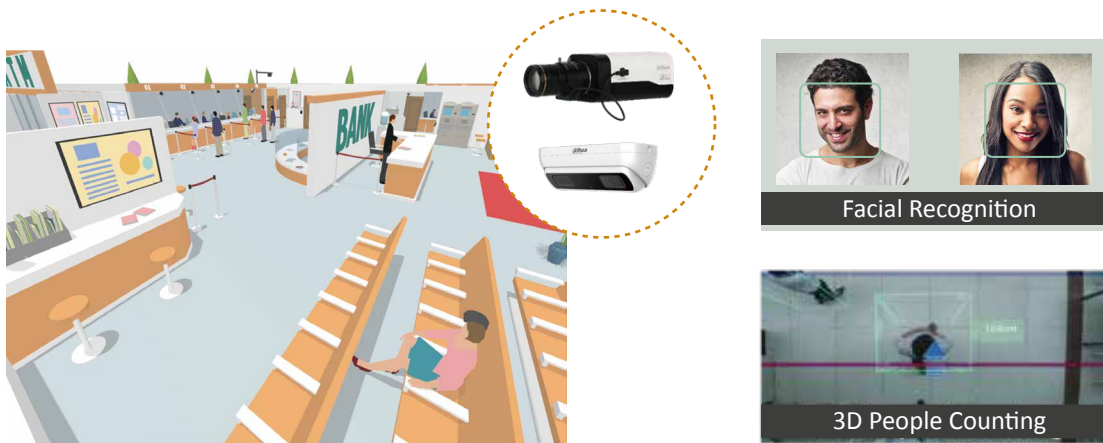
- Monitors the ATM operation area that targets installation of any skimming device across the entire bank branch or network.
- In the event of detection of any suspicious objects installation, an alarm will immediately be sent to the control center.

OPTIMIZE BUSINESS OPERATION

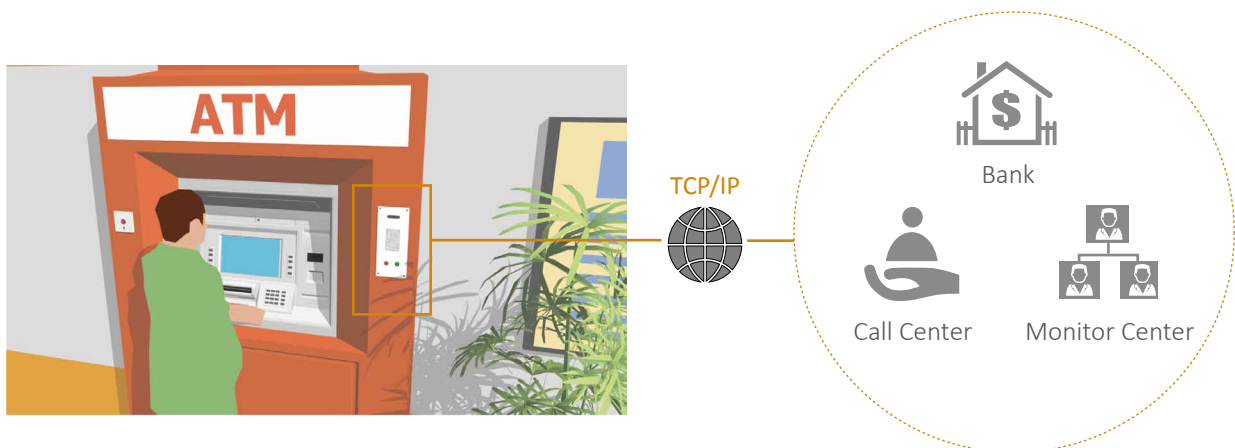
For banks, optimizing their branches' operations and improving their customers' experience are crucial success factors. With the advancement of artificial intelligence and analytics, banks can now use video surveillance data to optimize and improve customer experience.

Application Scenario

Branch Office



- Provides accurate statistics of customers' waiting time, including those who waited beyond the acceptable limit.
- Offers VIP customer recognition that timely alerts the customer manager, improving the efficiency of the banking service and customer experience.
- Performs demographic analysis to understand visitor types.
- Offers periodic statistics of customer flow, providing basis for managers when making decisions.



- Provides remote assistance to users using operations guide to solve confusions.
- Deals with card swallowing, machine errors and other emergencies.

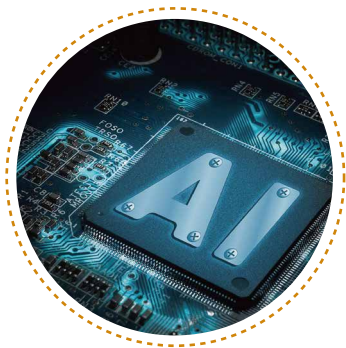


KEY TECHNOLOGY



Video Analytics

Video Analytics is the key technology that is embedded into our NVRs and XVRs. With video analytic feature, the data collected across the branches and ATMs find a new meaning. Video analytics feature can be used to optimize branch operation by detecting queues, remotely monitoring bank branches, measuring number of visitors, and recognizing VIP customers. Accurate video analytics can help managers in decision making process. Banks with analog cameras can now reap the benefits of AI by deploying our intelligent XVR that can perform facial recognition, people counting, heat map and other intelligent functions at the backend, providing a cost effective intelligent solution.



Artificial Intelligence

Dahua surveillance systems use deep learning algorithm and video structuring for face detection and recognition and it performs complex facial analysis to quickly identify a variety of face attributes, such as age, gender, facial expression and so on. It also offers improved heat mapping functionality to understand the customer behavior inside the bank branch. In this way, analyzing video content in real time becomes more efficient and more powerful. With intelligent AI camera, the computing is brought to the edge of the system, which drastically reducing the bandwidth, requirement.



Smart H.265+

Dahua Technology implements Smart H.265+ in its surveillance. The adoption of Smart H.265+ greatly reduces the transmission bandwidth and storage capacity while maintaining the same video image quality. With innovative features such as dynamic region of interest, scene-adaptive encoding strategy, noise reduction, and dynamic group of pictures, Smart H.265+ maintains high quality video without causing network strain.

Smart H.265+ saves bandwidth and storage by 30% over H.265 and 80% over H.264. The full adoption of Dahua's Smart H.265+ can effectively protect your investment and can provide a cost-effective Ultra High Definition (4K) video surveillance solution.

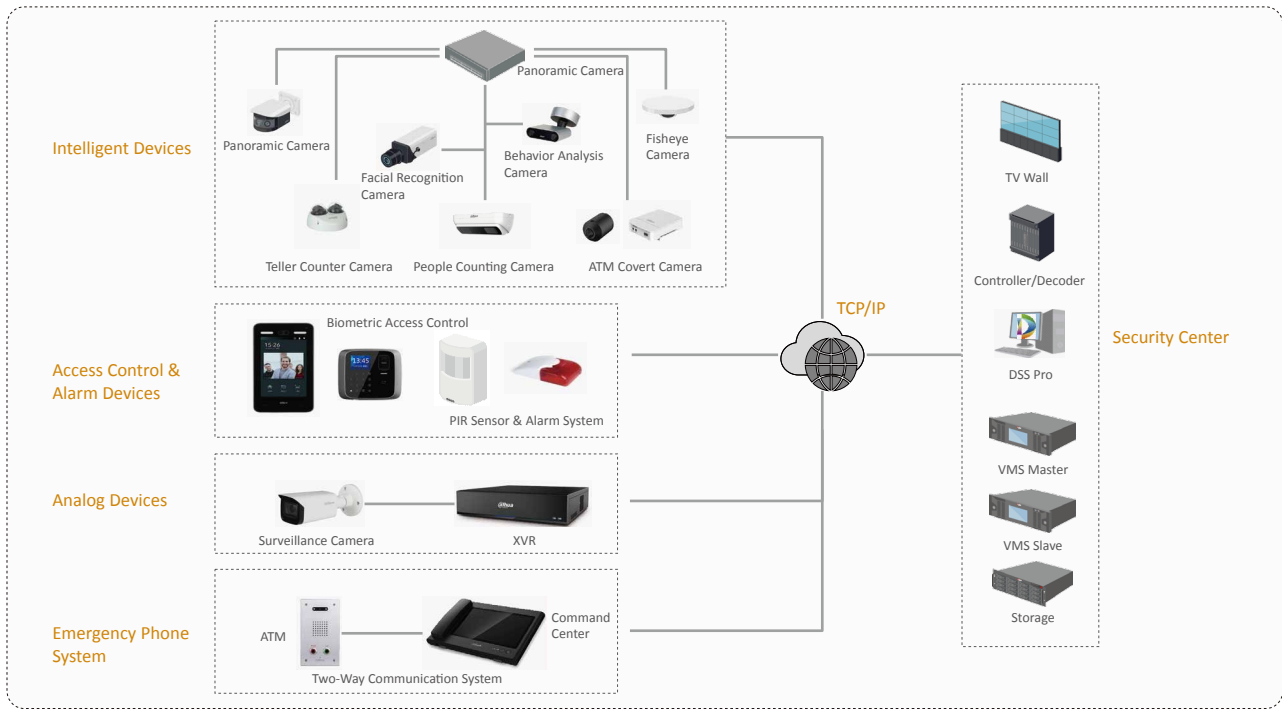


Data Safety

Data security is a paramount part of the bank. Dahua's data safety technology guarantees the data safety in case of some unexpected incidents, such as device break down, network connection failure and so on. It ensures that when the master server fails or disconnects, the stand-by server will automatically switch to active mode to keep the whole system running properly. It also supports Auto Network Recovery (ANR) via automatic backup in SD card of the camera in case the network connection fails, and moves the data to the central storage or backend device when the connection has been restored.

SOLUTION TOPOLOGY

System Topology



SOLUTION HIGHLIGHTS

Highlights

- Ultra High Definition**
 4K UHD with IR and starlight feature that supports dynamic application scenario surveillance, greatly improving image quality.
- Intelligent Application**
 Supports various intelligent applications such as facial recognition, behavior analysis, queue management, people counting, heat map, ANPR, POS/ATM integration and overlay.
- Unified Integration**
 Easy to integrate and manages different devices such as access control, intelligent camera, analog camera, alarm systems, ATM pinhole cameras, emergency phone system in a single platform
- System & Data Safety**
 Real-time monitoring of device's health and network status, to prevent video loss and to ensure a foolproof surveillance solution.
- High Cost-Efficiency**
 Offers multi-functional products, reusing of existing cables and easy installation, low overall investment and maintenance cost, which greatly reduces TCO.



PRODUCT SELECTION

IPC-PFW8802-A180



- Four 1/1.8" 2Megapixel progressive scan CMOS
- H.265/H.264 triple-stream encoding
- Max 25fps@4096x1800
- Supports 180-degree panoramic view
- Day/Night(ICR), 3DNR, AWB, AGC, BLC, WDR
- Smart detection
- Intelligent Function
- Max. IR LEDs length 30m
- Micro SD memory, IP67, IK10,PoE+

IPC-HF7442F-FR



- 4MP, 1/1.8" CMOS image sensor, low illuminance, high image definition
- Max outputs 4MP (2688 × 1520) @25 fps/30 fps, meets high frame rate requirement, and max. supports 60 fps
- H.264 & H.265 coding, high compression ration · WDR, day/night, 3D DNR, AWB, HLC, BLC · ROI, SVC, SMART H.264/H.265, flexible coding, applicable to various bandwidth and storage environments
- With deep learning algorithm, it supports people counting, face recognition, perimeter protection, and video metadata

IPC-EBW81242



- 12MP, 1/1.7" CMOS image sensor
- Max output 12MP (4000×3000)@30fps
- 3D DNR,AWB,HLC, BLC,ROI, SVC, SMART H.264/H.265
- People counting in multiple areas, queuing management in multiple areas, heat map (number of people /time), and track map
- 2/2 Alarm in/out, 1/1 audio in/out
- 12V DC/POE power support
- IP67, IK10 protection

IPC-HDW8341X-3D



- Two 1/2.8" 3Megapixel progressive scan STARVISTM CMOS
- H.265&H.264 triple-stream encoding
- 25fps@3MP(2048×1536)
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- 2.8mm fixed lens (3.6mm optional)
- Max. IR LEDs Length 10m
- Micro SD memory, IP67, PoE
- People Counting: Supports line crossing people counting, area people counting

IPC-HDBW4231F-E2-M/M12



- Two 1/2.8" 2Megapixel progressive scan STARVISTM CMOS
- H.265&H.264 dual-stream encoding
- 25/30fps@2M(1920×1080)
- Smart Detection supported
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- 2.8mm fixed lens (3.6mm optional)
- Max. IR LEDs Length 20m
- Micro SD memory, IP67, IK10, PoE

IPC-HFW8241XP-3D-0360B



- Two 1/2.8" 2Megapixel progressive scan STARVISTM CMOS
- H.265&H.264 triple-stream encoding
- 25fps/30fps@1080P(1920×1080)
- WDR(120dB), Day/Night(ICR), 3DNR,AWB,AGC,BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- 2.8mm fixed lens (3.6mm, 6mm optional)
- 3/2 Alarm in/out, 1/1 audio in/out, build-in MIC
- Max. IR LEDs Length 40m
- Micro SD memory 256GB, IP67, PoE
- Five types of behavior analysis: Fall detection, loitering detection, people following, violence detection, vandalism detection

PRODUCT SELECTION

IPC-HDBW5442E-Z4E



- 1/1.8" 4Megapixel progressive scan CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@2688 × 1520, 50/60 fps@1080 (1920 × 1080)
- WDR (140 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 8 mm–32 mm motorized lens
- 1/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 80 m
- Micro SD memory, IP67, IK10

IPC-HUM8231-L1 & IPC-HUM8231P-E2



Camera lens Unit

- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- Day/Night(Electronic), WDR
- 2.8mm Fixed Pinhole Lens
- 8-meters cable

Main Box Unit

- H.265&H.264 double-stream encoding
- 25/30fps@1080P(1920×1080)
- Day/Night(Electronic), WDR, 3DNR, AWB, AGC, BLC
- Smart detection
- Micro SD memory, PoE
- Multiple Lens Unit optional
- Supports connection with 2 Lens Units

DSS Pro



Easy Expansion

- Easy performance upgrade via distributed hardware extension and cascading

- Easy function upgrade via add-ons

High Reliability

- Backup and restore database
- Supports hot standby for master server

High Compatibility

- Dahua's devices included: network camera, network speed dome, decoder, NVR, DVR, ANPR, etc.
- Connects third-party devices via standard ONVIF protocol
- DSS Pro SDK for third-party platform or mobile development

NVR608-32-4KS2



- Intel Processor
- Max 32 IP Camera Inputs
- Max 384Mbps Incoming Bandwidth
- Up to 12MP Resolution for Preview and Playback
- Supports RAID 0/1/5/10
- Smart Tracking and Intelligent Video

XVR8208A-4KL-I



- H.265+/H.265 dual-stream video compression
- Supports HDCVI/AHD/TVI/CVBS/IP video inputs
- Supports 16 channels of IPC access, each channel up to 12MP input;
- HDMI1 4K@60 fps output
- Supports AI by camera function
- Up to 16 channel perimeter protection
- Up to 2 channel video stream human face recognition
- Up to 2 channel metadata
- Up to 24 face pictures/sec processing
- Up to 10 face databases with 20,000 face images in total

EVS7024D-R



- Intel Processor
- Dual Controller architecture
- Max 512 IP Camera Inputs
- Max 1024Mbps Incoming/recording Bandwidth
- 24 HDDs, SAS, Hot-Swap
- Supports RAID 0/1/3/4/5/6/10/50/60/ JBOD, Hotspare
- iSCSI and Mini SAS for Expanded Storage Space
- Support standard iSCSI Protocol Storage
- Modular & Cableless Design
- Redundant Power



PRODUCT SELECTION

HCVR0404AS-VD



- Tribrid: Support HDCVI/Analog/IP video input
- High Profile H.264 dual-stream video compression
- HDMI/VGA/TV simultaneous video output
- ONVIF Version 2.3 conformance
- Supports 2SATA HDDs up to 20TB
- Multiple network monitoring: Web viewer, CMS(DSS) & Smart Phone(DMSS)

ASA4214F



- 4.3 inch touchscreen
- Dual- biometric identification: face and fingerprint
- Live face detection, detects fake face images or videos
- Accurate performance even in poor lighting conditions
- DST--daylight saving time & NTP--network time protocol
- TCP/IP for communication
- Supports P2P add device , easy management devices in remotely in DSS Pro
- Supports 3rd party controller connection via Wiegand
- Supports face/fingerprint/card/password or combination identification
- 6 kinds of customizable attendance events
- USB exports of attendance reports from device
- Supports Lock control, anti-passback, first card etc
- Voice prompt
- Hardware overvoltage and overcurrent protection

VTT201



- HD CMOS camera
- Night vision
- Video & audio talk
- Remote monitor and broadcast
- Alarm integration
- Vandal proof, IP54,IK08

DH-LDV55-SAI200I



- Industrial Design, original panel, FHD resolution, all-metal and protective glass design.
- Built-in face recognition camera, supports display of different advertisement according to facial feature information.
- Supports picture, audio, video, PDF, IPC stream, time, weather, etc.
- Dahua platform provides unified remote management for system integrators and media operators.
- High fidelity digital processing provides brilliant and vivid video.
- 178°H/178°V extra-wide viewing angle for overall viewing performance.

DHL460UTS-E



- Industrial level DID LCD panel, suitable for extensive 24/7 continuous work
- High contrast and high brightness greatly enhance the video layering, and present the details of the video
- Built-in 3D COMB filter and 3D Noise Reduction
- Abundant interfaces HDMI, DVI, VGA, BNC, support video loop
- Built-in picture splicing function
- Infrared, RS232 double mode, supporting remote PC control
- Brightness smart detection, power-saving
- Professional thermal design to extend equipment lifespan

VTS5240B



- 10" TFT Capacitive touch screen, 1024×600
- IPC surveillance
- Alarm integration
- Micro SD card optional, max 32GB
- Record and snapshot(SD card needed)