INTEGRATED SECURITY SOLUTION FOR BANKING & FINANCE

-Security
-Smart
-End to End

Personal Safety
• 4K UHD
• Ultra Smart

Property Safety
• Behavior Analytics
• Smart Transaction Record

Business Integration
• Face Recognition
• Remote Inspection

Management Efficiency
• Customer Traffic Statistics
• Centralized Management

INDUSTRY CHALLENGES AND SOLUTION

Challenges

Personal Safety Issues
Robbery
Mugging
Kidnapping

Business Issues
Data safety
Manual inspection
Poor VIP experience

?
Challenges

Property Safety Issues
Theft
Fraud
Sabotage

Management Issues
Isolated information
Manual authorization
Customer traffic statistics

How to address the challenges

SOLUTION

How to guarantee personal security?
• Capture clear facial image with 4K cameras
• Prevent critical events with ultra-smart cameras

How to guarantee property security?
• Identify risks and activate alarm in time by intelligent behavior analysis
• Overlay the transaction information on the video to guarantee property safety

How to combine with business?
• Inspect the key areas by system
• Identify VIP customers by face recognition

How to improve management?
• Remote authorization
• Centralized management platform

SOLUTION OVERVIEW

Security Center
• Data safety
• System stability and reliability
• Abundant alarm mechanism

Cash Transaction Area
Large volume of cash transaction, high-definition facial picture and recorded transaction information is necessary to avoid potential disputes.

ATM
• Prevent security risks from robberies,   muggings, ram raids
• Comprehensive monitoring
• Video footage

Lobby
Large areas with lots of customers, require high-definition and no blind spots video.

Outdoor
Complicate environment, rapidly changing sunlight conditions require high-definition, ultra wide angle, starlight technology.

Entrance
Clear facial image in sharp sunlight, VIP recognition improve customer's experience.

APPLICATION AREA

To ensure the property and personnel safety of customer outside the bank, outdoor camera aims to avoid being traced and robbed by criminals, also facilitate the time of the incident control and evidence.
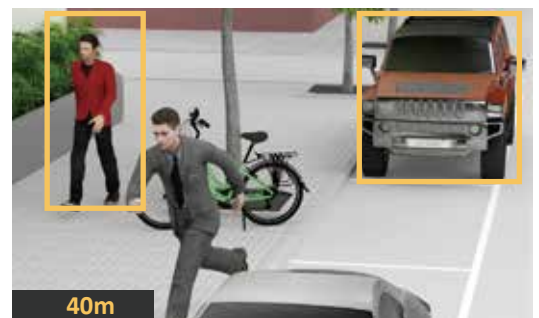
• Multi-lens with 180 degree panoramic view

• No loss under no lux, outstanding visibility under the starlights.

• 4K real time monitoring, excellent image performance:

Within **15** meters, clear face features and license plate numbers of the car can be observed.

Within 40 meters, the characteristics of the physical appearance of the person and the car can be detected.

Entrance

Lots of people go in and out frequently with intense sunlight contrast, a camera with true WDR and smart function is must-have.
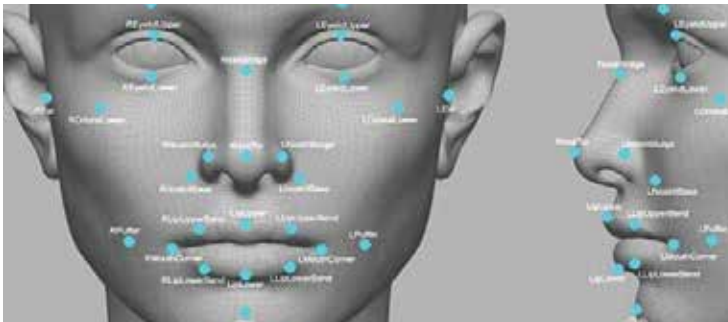
WDR Off

WDR On

• **Super WDR Camera:**
Dahua ultra smart series cameras can reach up to 140dB wide dynamic range for obtaining a crystal clear image quality even in high contrast sunshine environment.
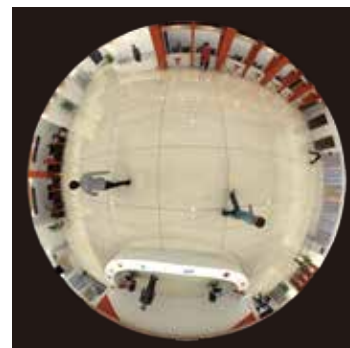
• **Face Recognition:**
Facial Recognition help you improve VIP customer service and protect your assets by identifying potential perpetrators.

Lobby

The lobby areas are the most visited locations that require high detailed facial images and no blind spots.
• 4K ultra smart fisheye with 360 degree overview and high definition to get the best coverage

Cash Transaction Area

High volumes of financial transactions each day – from signing documents to approving loans – may leave institutions vulnerable to customer misunderstandings or disputes.

• Using built-in pinhole camera, close-up face images captured by picture in picture function while transaction information overlays in the video to avoid disputes or misunderstandings from customer.

• 1+1 panic button
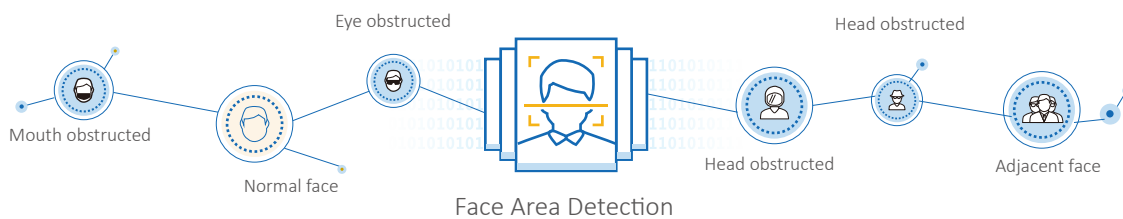The alarm can be triggered in time if there is an emergency

ATM Area

To ensure the property and personnel safety of customer and protect the asset, discreet vandal-proof pinhole cameras keep a watchful eye on ATMs, serve as a deterrent, and send automatic alerts when criminals attempt to steal or damage your property so that you can take immediate action.

• Intelligent face analysis, send automatic alarms if detect exceptional phenomenon.
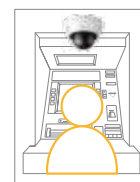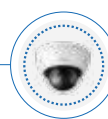
Eye obstructed

Head obstructed

Mouth obstructed

Normal face

Head obstructed

Adjacent face

Face Area Detection

• Anti-skimming, recognize ATM-skimming and detention time of the customer.

• Advertising stickers
• Fake card reader
• Fake keyboard

Operation Area Detection

• Enter detection
• Detention detection
• Leave detection
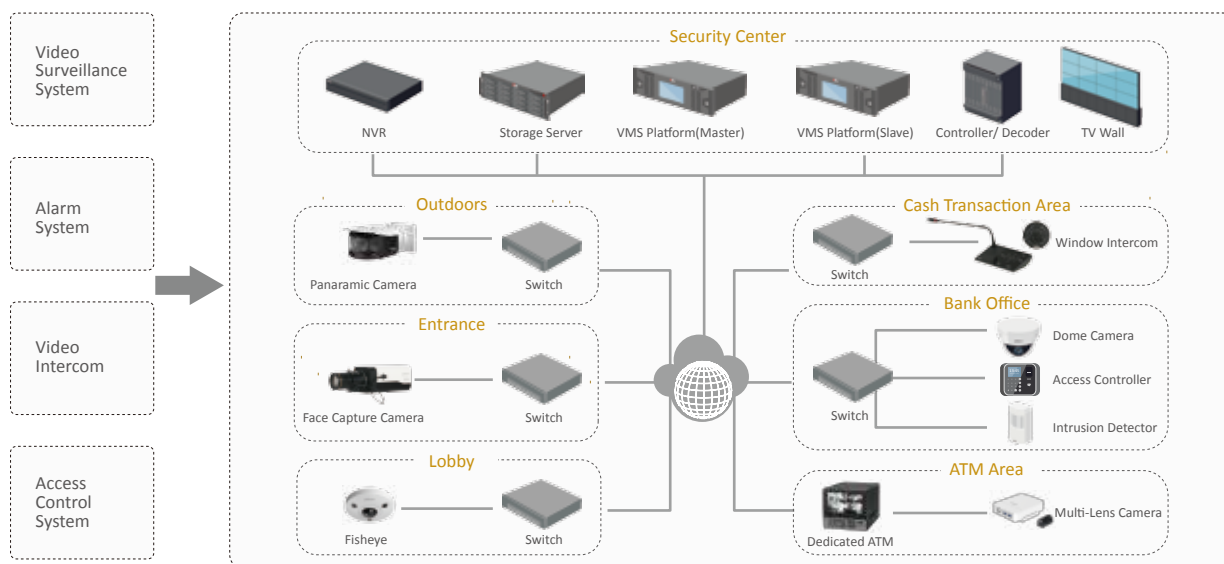
Security Center

DSS PRO is the CCTV system core that manages, views, plays back, and controls all the daily operations among all devices, the system works in master-slave mode and unified management of whole system resources.

- **Embedded NVR:** Dahua has the richest embedded network recorder product line – from 4 channels to 256 channels – for every level of needs
- **Network Storage:** A must-have product line for total secure data storage
- **Decoder:** Abundant 4k resolution decoders provide connection to the TV wall
- **Display:** Dahua has a variety of display devices, from standalone monitors to large TV walls

SOLUTION TOPOLOGY

System Topology

SOLUTION HIGHLIGHTS

Highlights

- **High Definition:** High resolution of 4K, improve image quality greatly.
- **High Cost-Efficiency:** Multi-function product, reuse the existing cable and easy to install, greatly save the investment.
- **VIP Service:** Through face recognition function, enhance the VIP customer experience.
- **Integrated and Compatibility:** End to end system, compatible with third-party system.
- **Smart Transaction Record:** Record the transaction information and clear facial picture, provide strong proof if disputes or misunderstandings from the customer.
- **Abnormal Behavior Recognition:** The system recognizes abnormal behavior based on intelligent video analysis and sends alerts to the security center, informing workers of the situation.
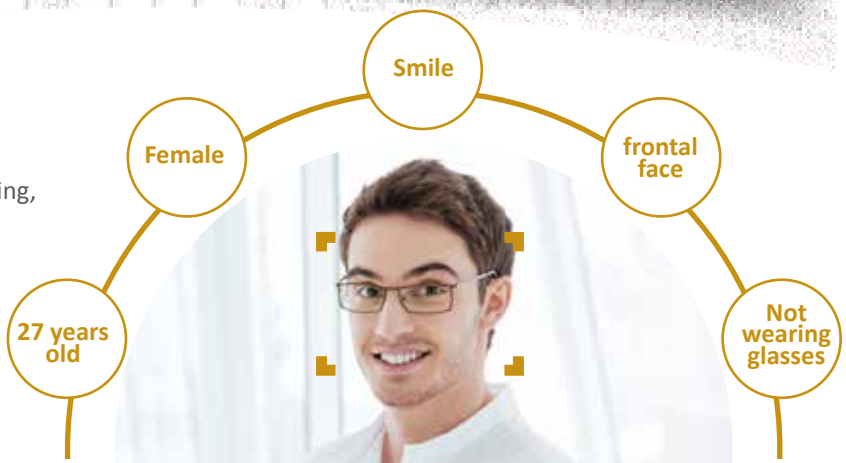
KEY TECHNOLOGY

H.265

H.265 = H.264 + ?
Dahua is the pioneer of H.265 implementation in surveillance industry. The adoption of H.265 can greatly reduce the transmission bandwidth and storage capacity while maintaining the same video image quality.
The full adoption of H.265 can best protect your investment and be an important enabler for Ultra High Definition (4K) surveillance in a reasonable cost.

$$H.264+ \quad \begin{array}{l}\text{Higher compression ratio} \\ \text{50\% savings on storage/transmission} \\ \text{Let 4k become more realistic} \\ \text{And the future......}\end{array} \quad =H.265$$

Video+

Reconstruction of the human upper body modeling, using the most advanced machine learning algorithm and video structure, quickly identify a variety of face attributes, such as age, gender, facial expression and so on.
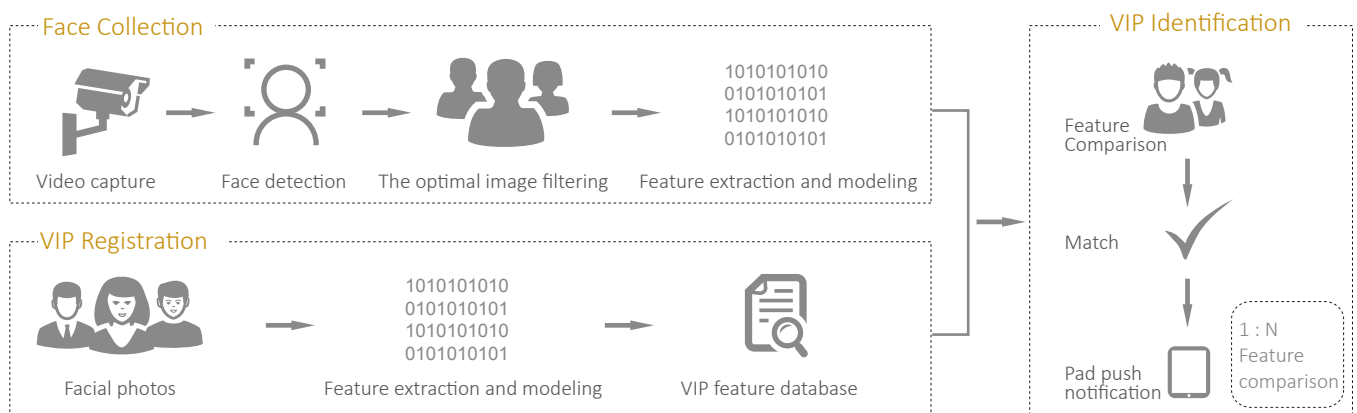
Smile
Female
frontal face
27 years old
Not wearing glasses

Video+ application scenario：

VIP Recognition
When the VIP customers arrive at the business hall, the account manager can be promptly notified and provide proper service, to improve VIP customers experience.

Technology Principle:

Face Collection

Video capture → Face detection → The optimal image filtering → Feature extraction and modeling

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VIP Registration

Facial photos → Feature extraction and modeling → VIP feature database

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VIP Identification

Feature Comparison

Match

Pad push notification

1 : N Feature comparison

Advantage Analysis :

Millions of gallery with second level response

Beyond the human eye recognition
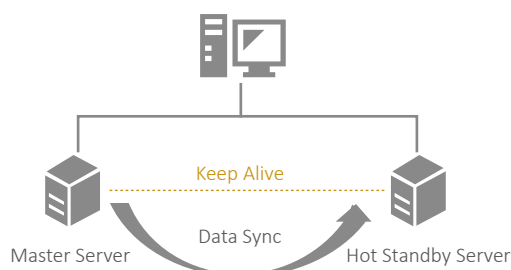
Non-contact, multi-angle recognition

Customer Value:

Timely notify the lobby manager, enhance the quality of VIP services

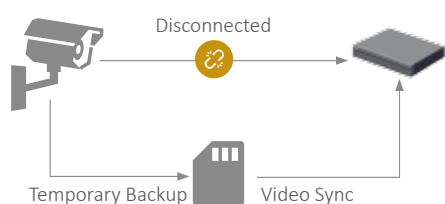Reduce VIP waiting time, improve VIP satisfaction

Data Safety

Data safety is paramount part in Bank, Dahua's data safety technology gurantees the data safety if there are some unexpected incidents,such as device break down, network connection fails and so on.
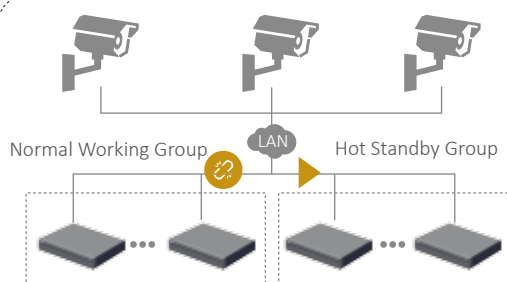
Keep Alive

Master Server

Data Sync

Hot Standby Server

Server Redundancy Design
• Master & Hot Stand-by servers.
• "Keep Alive" function automatically backs up users' information if one server is interrupted.
• When the master server fails or disconnects, the hot stand-by server switches to active mode automatically to keep the whole system running properly.

Disconnected

Temporary Backup   Video Sync

Auto Network Recovery(ANR)
• Auto backup if network connection fails.
• Data moves from SD card to back-end device while network connection is restored.
• We recommend using Dahua brand SD card.

Normal Working Group   LAN   Hot Standby Group

N+M Hot Standby
• N master NVRs in running mode.
• M slave NVRs in standby mode.
• No data lost, when any active NVR is out of service, the hot standby NVR can take over recording automatically.

PRODUCT SHOWCASE

IPC-PFW8800-A180

- Four 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- H.265/H.264 triple-stream encoding
- Max 25fps@4096x1800
- Support 180-degree panoramic view
- Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Smart detection
- Intelligent Function
- Max. IR LEDs length 30m
- Micro SD memory, IP67, IK10,PoE+

IPC-HF8242F-FD

- 1/1.9" 2Megapixel progressive scan CMOS
- H.265&H.264 triple-stream encoding
- 50/60fps@1080P(1920×1080)
- WDR(120dB), Day/Night(ICR), 3DNR,AWB,AGC,BLC
- Face Detection: built-in deep learning algorithm, support face images capture and facial attributes analysis

IVS-F7500-P

- Up to 2 Intel Xeon processors, up to 20 cores per processor
- NVIDIA TESLA P4 GPU, Integer arithmetic capability up to 22TOPS
- 2 x M.2 SSD 240 GB, raid1. Boot optimized storage subsystem
- 128GB DDR4 ECC memory
- 20T, 5 × 4T SATA HDD
- Up to 100 channels face recognition
- Dynamic Database 300,000; Static Database 20,000,000
- A thousand comparisons per second
- Search by image
- Blacklist alarm

IPC-HDBW5231E-Z

- 1/2.8" 2Megapixel progressive scan Exmor CMOS
- 50/60fps@1080(1920×1080)
- Smart Detection supported
- 2.7mm ~12mm motorized lens
- Max. IR LEDs Length 50m
- Micro SD memory, IP67, IK10, PoE

IPC-EBW81230

- 1/1.7" 12Megapixel progressive scan STARVIS™ CMOS
- H.265/H.264 triple-stream encoding
- Max 25fps@12M(4000×3000)
- Multiple dewarped Mode
- Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Smart detection
- Intelligent Function
- Max> IR LEDs length 10m
- Micro SD memory, IP67, IK10, PoE

IPC-HF5231-Z

- 1/2.8" 2Megapixel progressive scan Exmor CMOS
- 50/60fps@1080P(1920×1080)
- Smart Detection supported
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- 2/1 Alarm in/out, 1/1 audio in/out(Built-in Mic)
- Auto back focus(ABF)
- Micro SD memory, PoE

HAT200-N2

- Hi-fidelity full duplex intercom
- Support master and slave volume adjustment
- Record the audio and video simultaneously
- Support wide dynamic range
- Face detection
- The metal fuselage, full touch buttons

IPC-HUM8231-E2

- 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
- Support connecting with 2 Lens Units

PRODUCT SHOWCASE

IPC-HUM8231-L1

- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- Day/Night(Electronic), WDR
- 2.8mm Fixed Pinhole Lens
- 8-meters cable
- Require a Main Box to work together

IPC-HDBW4830E-AS

- 1/2.5" 4K progressive scan STARVISTM CMOS
- H.265/H.264 dual-stream encoding
- 15fps@4K(3840×2160),25/30fps@3M(2304×1296)
- DWDR, Day/Night(ICR), 3DNR,AWB,AGC,BLC
- Multiple network monitoring: Web viewer, CMS(DSS/PSS) & DMSS
- 4mm fixed lens
- Max. IR LEDs Length 30m
- IP67,IK10, PoE

HCVR0804AH-VD-I

- Tribrid: Support HDCVI/Analog/IP video input
- Up to 8 cameras with SXGA(1280×1024) display
- Face Recognition: Normal face recognition,
  abnormal face recognition and multi-face recognition
- ATM Protection: Fake keyboard detection, fake card reader detection
- Scene Application: Tripwire detection, cross warning zone detection,
  abandoned/moved object detection and etc.
- Built-in kinds of ATM card number protocols,
  support bank card number and multi-information overlay
- Built-in 7 inch screen

NVR608-32-4KS2

- Intel Processor
- Max 32 IP Camera Inputs
- Max 384Mbps Incoming Bandwidth
- Up to 12MP Resolution for Preview and Playback
- Supports RAID 0/1/5/6/10/50/60
- Smart Tracking and Intelligent Video

DSS PRO

- Based on Windows OS
- New design interface, better experience
- Easy performance upgrade through distributed hardware extension
- Easy functionality upgrade via add-ons
- Supports hot standby for master server
- Dahua's devices included: network camera, network speed dome, NVR,
  DVR, MNVR, ITC etc.
- Connects to third-party devices via standard ONVIF protocol
- DSS Pro SDK for third-party platform or mobile development

EVS5016S-R

- Intel Processor
- Max 512 IP Camera Inputs
- Max 1024Mbps Incoming/recording Bandwidth
- 16 HDDs, SATA, 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

DHL460UTS-E

- Industrial level DID LCD panel,
  suitable for extensive 7×24 continuous works.
- High contrast and high brightness
- High fidelity digital processing and vivid video.
- Built-in 3D COMB filter and 3D Noise Reduction
- Brightness smart detection, power-saving
- Using Tamper-proof metal housing, no radiation

PRODUCT OVERVIEW

Product	Description	Outdoor	Entrance	Lobby	Cash Transaction Area	ATM area	Security Center
IPC-PFW8800-A180	Multi-Lens Panoramic Network IR Bullet Camera	●					
IPC-HF8242F-FD	2MP Starlight Face Detection Box Network Camera		●				
IVS-F7500-P	Face Recognition Server		●				
IPC-HDBW5231E-Z	2MP WDR IR Dome Network Camera			●			
IPC-EBW81230	360° panomorph camera			●			
IPC-HF5231E	2MP WDR Box Network Camera				●		
HAT200-N2	Window Intercom				●		
IPC-HUM8231-E2	2x2MP Covert Pinhole Network Camera-Main Unit					●	
IPC-HUM8231-L1	2MP Covert Pinhole Network Camera-Lens Unit					●	
IPC-HDBW4830E-AS	8MP IR Mini-Dome Network Camera					●	
HCVR0804AH-VD-I	8 Channel Tribrid Intelligent ATM DVR					●	
NVR608-32-4KS2	32 Channel Ultra 4K H.265 Network Video Recorder						●
DSS PRO	General Surveillance Management Center						●
EVS5016S-R	16-HDD Enterprise Video Storage						●
DHL460UTS-E	46" Full-HD Video Wall Display Unit (Ultra Narrow Bezel 3.5mm)						●

SUCCESS CASE

Bank of China

All the branches connect to the headquarter of Bank of China by national network, the solution integrated video, alarm, access control, intercom, and other important large-screen display subsystem, Dahua solution using three cascaded architecture, consist of headquarter, branches and sub-branches, involving 360 monitoring and control center, access to more than 600,000 cameras, more than 300,000 alarm devices.

SANASA Development Bank, Sri Lanka

Dahua provided the bank with a cost-effective, customized, high-definition IP security solution, designed for stability and reliability. The new system includes surveillance cameras and DVRs, as well as intelligent security software. A number of different camera models were chosen to cover all areas of the bank, including offices, counters, and ATM.

Alkuraimi Islamic Microfinance Bank, Yemen

Dahua provided a high-end upgrade solution which includes cameras, storage devices and control management software, More than 97 branches that scattered around the country are applied with thousands of Dahua cameras and hundreds of NVRs.

EcoIslamic Bank, Kyrgyzstan

Dahua provided 150 units of network camera, 129 units of 800TVL analog camera, and 124 units of Hybrid DVR for EcoIslamic Bank. The hybrid DVR turned out to be a right solution on addressing problems of mixed systems where both analog and network cameras have been applied.

Bank of Brazil

Dahua upgrades the whole monitor system in the bank very successfully, the system is not only involves many cities in Brazil but also uses more than 20,000 units of analog camera and 1,500 units of DVR.

Caixa Econômica Federal,Brazil

Founded in 1861, Caixa Econônomica Federal has over 150 years of history, It is one of the only two state-owned banks in Brazil and own more than 4000 branches, Dahua provide bank solution as the bank's requirement, the solution include more than 4000 HD network cameras, 400 NVRs and Storages

Bank BMCI, Morocco

Concerning that the bank has already covered with analog structure, Dahua offered a hybrid solution -megapixel cameras with higher image quality, easier management and hybrid DVRs.The solution selected megapixel HD network cameras for more than a thousand units as a total and three to four camera units with a hybrid DVR per branch. "With Dahua's good quality and services, BMCI is confident to handle with emergency and standardize the internal management," said Afaf Raid, the manager of Bank BMCI.

France BNP Paribas Bank, Bulgaria

BNP Paribas is one of the four largest banks in the world and the fourth largest bank in Europe.
In 2017, Dahua provided a full set of intelligent video surveillance systems for 45 branches of BNP Paribas in Bulgaria, including people counting function and analysis of regional stay time.
The system includes 200 cameras(IPC-HDBW8600E-Z / IPC-HDBW8231E-Z), 40 NVR(NVR5208-4KS2), DSS software platforms, M70, NKB3000 and 3*3 liquid crystal splicing displays(DHL460UTS-E)

NBK Bank, Kuwait

NBK was the first national bank in Kuwait and the entire Arabian Gulf region, established in 1952.
Dahua provide bank solution as the bank's requirement, the solution include more than 2000 HD network cameras(IPC-HDBW5431E-Z, IPC-HFW5431E-Z, IPC-HFW5431E-Z), 107 sets NVR616R-64-4KS2 and DSS7016RD

ENABLING A SAFER SOCIETY
AND SMARTER LIVING

Dahua Mexico
Tel: +52 55 67231936
Email: sales.mx@dahuatech.com
support.mx@dahuatech.com

Dahua Colombia
Tel: +571 7446110
Email: sales.co@dahuatech.com
support.co@dahuatech.com

Dahua Brazil
Tel: +55 11 32511871
Vendas: comercial.br@dahuatech.com
Suporte Técnico: suporte.br@dahuatech.com

Dahua Perú
Tel: +511 500-8555
Email: sales.pe@dahuatech.com
support.pe@dahuatech.com

Dahua Chile
Tel: +56 232705421
Email: sales.cl@dahuatech.com
support.chile@dahuatech.com

Dahua Argentina
Email: project.ar@dahuatech.com

Dahua Panama
Email: sales.pa@dahuatech.com
support.pa@dahuatech.com

Dahua Thailand
Tel: +66 2541 5188
Email: info.th@dahuatech.com
hr.th@dahuatech.com

Dahua Singapore
Tel: +65 65380952
Email: sales.sg@dahuatech.com

Dahua Turkey
Email: sales.tr@dahuatech.com
support.tr@dahuatech.com

Dahua Malaysia
Tel: +60376620731
Email: sales.my@dahuatech.com

Dahua Indonesia
Email:sales.id@dahuatech.com
support.id@dahuatech.com

Dahua S.Korea
Tel: +82 7081618889
Email: sales.kr@dahuatech.com
support.kr@ dahuatech.com

Dahua India
Tel: +91 1244569100
Email: sales.india@dahuatech.com

Dahua Russia
Tel: 8 (499) 682-60-00
Email: info@dahuatech.com

Dahua Kazakhstan
Tel: +7 727 3110838
Email: sales.kz@dahuatech.com

Dahua UK
Tel: +44(0)1628 673 667
Email: sales.uk@dahuatech.com
support.uk@dahuatech.com

Dahua the Netherlands
Tel: +31 (0) 79 799 96 96
Email: sales.benelux@dahuatech.com

Dahua Iberia
Tel: +34 917649862
Email: sales.iberia@dahuatech.com

Dahua Italy
Tel: +39 3703446609
Email: sales.italy@dahuatech.com

Dahua Germany
Tel: +49 211 20544121
Email: sales.de@dahuatech.com

Dahua France
+33 1 48 53 70 53
Email: sales.france@dahuatech.com

Dahua CEE & Nordic
Tel: +48 223957400
Email: dh.cen@dahuatech.com

Dahua Poland
Tel: +48 223957400
Email: biuro.pl@dahuatech.com

Dahua SRB
+38 1 (11) 4429999
Email: dh.srb@dahuatech.com

Dahua Denmark
Email: Nordic.ne@dahuatech.com

Dahua Hungary
Tel: +36 17899852
Email: sales.hu@dahuatech.com

Dahua Bulgaria
Tel: +35929950013
Email: support.bg@dahuatech.com

Dahua SRL
Email: marketing.ro@dahuatech.com

Dahua Czech
Tel: +420 225 986 001
Email: admin.cz@dahuatech.com

Dahua S. Africa
Email: sales.za@dahuatech.com

Dahua Australia
Tel: +61 299285200
Email: sales.oc@dahuatech.com

Dahua Middle East
Tel: +971 48815300
Email: sales.me@dahuatech.com
info.me@dahuatech.com

∗ Design and specifications are subject to change without notice.

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