



# Safeguarding Your Best Interests

Genius Vision Digital



## Trends in Banking Security

Back in the 1970s, when data storage relied on magnetic tapes, and VCR was expensive high-tech, banks were one of the few institutions to first use video surveillance for security. After the introduction of DVR in the 1990s, the market trend gradually transited to hard-disk-based digital video recorders. Then came the innovation of digital video and broadband network. So the focus of video surveillance shifted to IP video and led to the overall prevalence of IP cameras for the far better video quality offered. Today, banks choose these network video recorders: 1) **Standalone NVRs** for high-resolution IP cameras, and 2) **NVRs that can fully integrate with large-scale video management systems (VMS)**.



# The Best Solution

**B**anks have been looking for a better IP video surveillance because they have a variety of facilities that need protection, say branch offices, ATMs, corporate buildings, cash depots, and so on, and they demand the highest level of security. In the following, we will discuss what a system should include to deliver the best video surveillance for a bank.

Let us start with a branch office. A bank office needs not only good video quality but also a good layout of IP cameras to prevent any possible blind spot. Cameras should be properly installed at the entry, lobby, teller windows, parking lot, ATMs, and some other secured areas, such as a cash vault.

It is often the case that no IT personnel is available in a branch office. IT professionals usually work at the HQ offices hundreds of miles away. They search and retrieve video from a branch in question, monitor system health, manage system parameters, and update software remotely as required without leaving the headquarters. Therefore, a branch office requires an NVR that is reliable and robust in providing service and efficient in video retrieval. It is better if the NVR can monitor system health, such as system heat or potential hard disk failure.

A bank is usually a large institution with branches over a district, a state, or a nation. So the competent video surveillance for a bank should be able to centralize the control over a large group of HD megapixel IP cameras across a significant area. And, because a bank headquarters needs to take an immediate reaction to an incident at its facilities, real-time video surveillance is a must. Only a system featuring a control center can do that. With a control center, bank HQ can be alerted for a potential hard disk failure or a camera malfunction at a branch.

For an activity like transiting monetary goods, mobile NVRs that works on the go undoubtedly makes a better video surveillance system for a bank.

Therefore, the prospective video system for banks should include:

## Robust & powerful branch NVRs

As it is often the case that no IT staff is available at a branch office, the NVR for a branch office must be robust and healthy

for 24 x 7 service. It should have rich hardware redundancy to ensure non-stop service in unexpected situations and better with “self-recovery” to a user-mistake or an interrupt by its environment.

For a branch, a server-room NVR should be powerful in handling video data. To process massive video data, the NVR should read/write video at high speed on a 24 x 7 basis. Also, the NVR should have abundant storage space and RAID features to safeguard video data from unexpected loss. Besides, a branch NVR should also be easy to scale up through flexible add-ons of system components.

## A maximized number of HD / megapixel cams

Demanding overall security of its business, a bank needs as many HD / MP IP cameras as possible to monitor their facilities and to keep security operators aware. They want an NVR to record and stream video with at least 25 fps. They also want to view as many videos as they have on an NVR.

## Control center at headquarters

A control center lets the headquarters remotely and real-time monitor what is going on within its asset and is instantly alerted when an abnormality comes up. It also allows IT staff to access any of a networked NVR at any time once management or maintenance is needed.



# The Best Solution



### Video walls

A video wall can help a bank HQ quickly cover as many floors and conditions as possible. You need not compromise the video quality if the video system is optimized for live video streams.

### Mobile NVRs

Mobile NVRs are an excellent approach to protect a bank's personnel in CIT cars and activities such as bank pick-up or confidential transportation of money. The mobile NVR should have POE ports to save the cabling and wiring from supplying power to in-car cameras. 4G data should be available to tether the CIT car to HQ control center. If the mobile NVR has a GPS receiver inside, the control center can locate the NVR when some emergency happens. If the mobile NVR has a G-sensor inside, the control center can get an instant alert when some severe vibration or crash happens.

### Full integration with ATM/POS

The video surveillance for banks should be capable of integrating videos with transaction data. The video should be synchronized with transaction data to facilitate data analysis. The IT staff should be allowed to define a text or a number with the transaction data to launch an alarm. The integration should be quick and easy, and data retrieval should be effortless.

### 3rd-party system integration

The best video surveillance system for a bank should support the popular serial-communication protocols, such as Modbus and Canbus. No extra cost and effort of engineering work for quick and easy integration with any 3rd-party system, such as an access control system, point-of-sale, and so on, is a must.

### Remote access clients

The system should offer rich data connections, including 3G/4G and WiFi. Software clients, web-based clients, and iOS/Android clients should also be available. So users can access an NVR from a PC or hand-held device, or via a web browser.

### Powerful alarm management

The video surveillance for a bank should feature powerful alarm management. The system should allow IT staff to define which condition to trigger an alarm, whether CPU overheat or video loss. The system should also let the IT staff determine how to launch an alert, whether by a video pattern or by a text message that pops up.





# GVD Bank Solution

## Video Management System

The "Video Management System" is GVD's large-scale VMS based on enterprise multi-site design. It converges different types of servers and a large number of cameras and sensors onto one management platform to process massive video, with high throughput, redundancy, and fault-tolerance.

Hardware-wise, the platform stacks up several highly robust physical servers including the following:

Component	Model	Description
VMS Workstation	E4200	The control and input/output unit for the whole system.
NVR	M3/M4/M6	Streams, records, and archives video for up to 128 channels.
VMS Database Server	C5002	Stores the configuration data and the logs of all system components and holds them together to work for the system.
VMS Videowall	D4200	Delivers high-quality video walls for the system.
Backup Server	X6024	Uses RAID 5 to get video data directly from IP cameras on a 24 x 7 basis.
Failover Server	X5016	Assumes the jobs of an overloaded or failed NVR..
AppPack Server	C5201	Helps the system cooperate with a sophisticated 3rd-party application, such as <b>TechnoAware Vtrack</b> and <b>NEC NeoFace®</b> .
Integration Gateway	C5001	Helps the system take in a 3rd-party system without much trouble.

## Central Management Software-

## VMS Manager

GVD "VMS Manager" is the central management software, to control each aspect of the system. For example, one can change what to output on a video wall, which NVR to watch over, or which video to back up.

## Brilliant device refiner

To ease the complexity of large system management, the software features a brilliant device refiner to narrow down a large group of devices to a tiny one to quickly retrieve a particular device.

**"The refine field"**  
Refines devices with one or more keywords.

Refine with one or more states.

Refine with one or more conditions.

Refine with one or more shortcuts.

The pre-populating panel

**"The refine field"**  
Refines the available devices with one or more keywords.

Tags one or more devices.  
Exports to PDF

Shortcut tree

Device tree

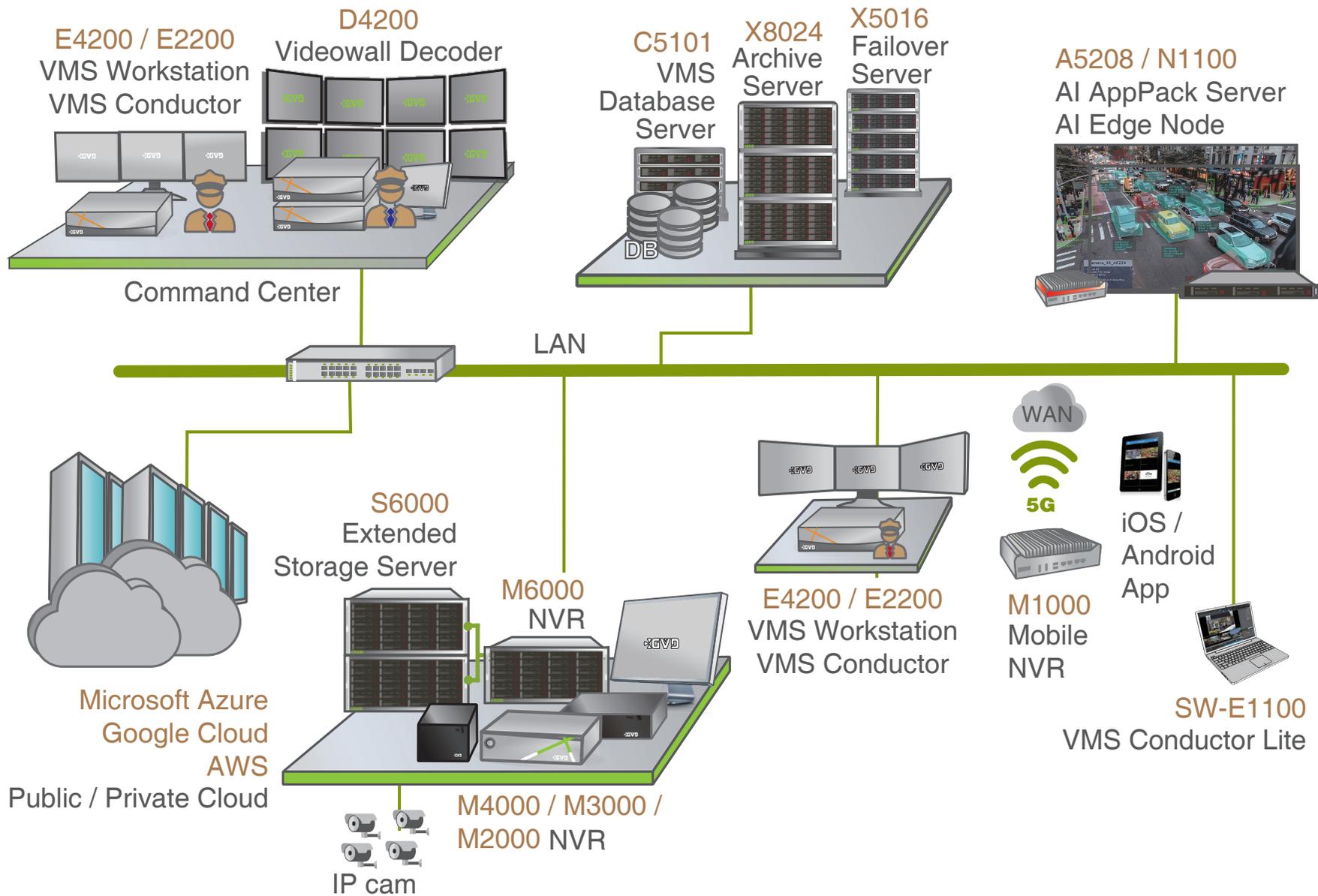
Tag tree

Refined devices

Goes to the parent device

Select one or more device(s) to tag.

# System Architecture



# Highlights of GVD Video Management System

## Enterprise multi-site design

Banks usually use hundreds of cameras and sensors to safeguard their property. GVD NVRs can easily scale up to GVD Video Management System, a centralized video system for 100,000 channels. Supporting the most popular serial-communication protocols, it is also easy for the Video Management System to take in a 3rd-party system, such as an alarm system or an access control system.

## Easy expansion

A system improperly designed can result in a significant effect in overall performance, such as video loss, slow performance, or the likes. GVD Video Management System allows easy project scale-up through flexible add-ons of GVD products, such as VMS Videowalls, NVRs, failover servers, and so on.

## Mobile NVRs for confidential activities

GVD offers a total solution for banking security, including the rugged Fanless and Mobile M1 NVRs. The mobile NVR comes with 4G/3G/Wi-Fi/GPS, G sensor, and certified e13 mark, suitable for the transportation of monetary goods or bank pick-up.

Large-scale projects with 100 to 200 buses, trucks, or cars are supported. GIS maps are also available.

## Extra robust NVRs

Typically, there is no IT staff stationing at a bank branch. GVD made the NVRs extra robust for 24 X 7 running. They have dual watchdogs and hardware redundancy, such as dual power units, LAN ports, and LSI-RAID. A chip-based hardware watchdog is built on the motherboard to handle any of these situations of an NVR: Memory-overrun, CPU-overload, or system hang-up. Besides, the hardware watchdog can also wake up the system by restarting it.

## Command center

GVD *Central Management Platform* brings a command center solution. A command center help a bank monitor real-time across a nation, so the security operators can react without delay to a suspicious transaction or critical video image, even if it takes place on a CIT car. GVD's mobile NVRs extend the protection beyond conventional business floors.

## Better user experience

The central management software, **VMS Manager**, uses a variety of enlarged graphics on its UI to present a modern look. The software also features a system **Taskbar** unseen before to streamline user's navigation in the system. The **Notification Area** on the **Taskbar** not only gives a quick overview of all system notices but also lets you lock out accesses to the system.



Modern looking UI

## UVV-Kassen and others certified

For radio disturbance and electro-magnetic compatibility, GVD has some NVRs certified by **EN50130-4**, **EN55022**, and **EN55024** while all NVRs are certified with **CE mark**. GVD also has some NVRs approved by "UVV-Kassen" (*Unfallverhütungsvorschrift Kassen*), which guarantees high quality of digital recording devices for the use in banks and financial institutions. Multiple certifications make the platform highly competent and highly capable.

## VHD (Virtual Hard Disk)

GVD loads the NVR with a "virtual hard disk" (VHD), a Windows-based system image tool, to take a snapshot of system status and software settings that can be used to recover your system within 5 minutes if a severe system failure or software corruption should occur in the future. This tool can reduce not only RMA but also the need for on-site support. For users, everything just falls back into place so soon.

## Small fanless NVRs for

## ATM cabinets

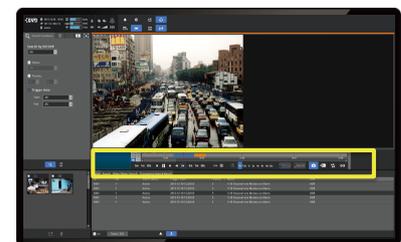
GVD has a Fanless NVR that comes with small footprints to fit into constraint ATM cabinets. The Fanless ATM NVR comes with four camera licenses and four POE ports, and it can bare two pieces of 2.5" HDD/SSD.



Rugged design that fits all environment needs

## Powerful read/write engine of NVRs

Unlike a conventional NVR with a central database, GVD NVR features an exclusive **TSE (Time Sector Engine)** to control high bandwidth throughput up to 600 Mbit/s over 1G LAN port, up to 128 IP cameras at 3Mb/s, and processes video at high speeds, such as real-time PTZ control. Such powerful engine allows the Video Management System to support as many HD / MP IP cameras as possible to meet a bank's need for security.



High speed video processing

## Bandwidth clever & handy within reach

For a large project, the NVR uses a variety of techniques to minimize the impact of limited bandwidth, including **TSE (Time Sector Engine)**, **ROI**, **Turbo Mode**, **Adaptive Video Streams**, **Playout Control**, and **Live Multicast**. Users not only get fluent video streams, but also get to access an NVR or receive alarms in poor network conditions. And, by the multiple clients featured, the NVR is mighty handy. Clients are featured for PC, web browsers, and handheld devices, such as iPhone, iPad, and Android phones/tablets.