ACCESS MILLENNIUM

AN IP SOLUTION FOR VIDEO SURVEILLANCE

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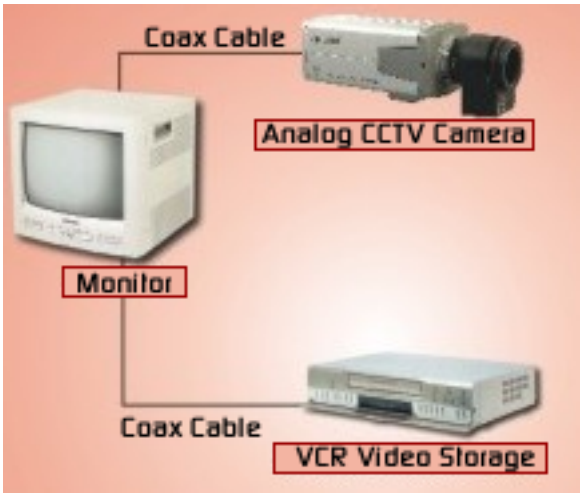
INTRODUCTION

For many years now, security monitoring meant deploying various closed circuit TV (CCTV) technologies. Property owners and municipalities have already made significant investments in analog CCTV technology, however no system is so tightly tied to legacy technology that it can't be enhanced by the integration of digital IP technology.



There are several physical and technical limitations inherent in conventional analog or analog-to-digital (A2D) Closed-Circuit Television (CCTV) surveillance systems.

Such CCTV systems are expensive, difficult to install, easy to circumvent and limited in functionality. The fact is that legacy CCTV solutions are inadequate in addressing the expanded role for video surveillance now required by large residential complexes, industrial parks or municipalities.

CCTV Limitations

- High cost of deployment (cabling. cameras, tape storage, central control center, dedicated personnel).
- All video feed and control cables have to be run to central location (security center).
- Centralized security center constitutes a single point of failure within the security infrastructure.
- CCTV records images on videocassettes. It is not possible to view live events except from a central monitoring location.
- High reliance on human factors to physically change the tapes, monitor recording sessions, etc.
- Tape libraries require storage of many tapes, and human intervention required for filing, cataloging, etc.
- Magnetic media is susceptible to magnetic discharge or discharge through static electricity.
- Criminals can locate VCR and remove the tape to eliminate evidence.
- New cable run usually required if camera is to be moved.
- Long cable runs require the use of repeaters for signal strength or where EMI (Electro-Magnetic Interference) is an issue.

IP VIDEO SURVEILLANCE SOLUTION

Changing over to IP surveillance technology means investing in a system that will last well into the future. Physical security applications and services are merging rapidly with the IT industry. IP surveillance is in fact the new security standard. By adopting IP technology for security surveillance, Property Owners/managers will quickly see improvements in performance, functionality and a quick return on investment.

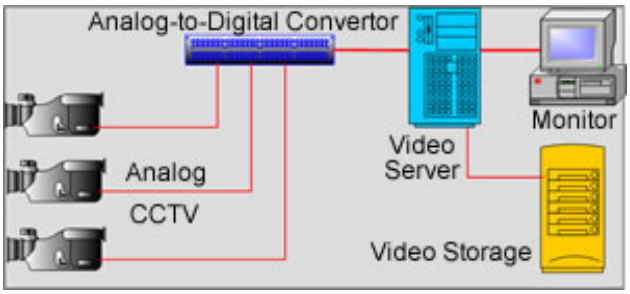
- Simple installation, configuration and maintenance procedures eliminate the need to retain specialized personnel.
- Secure, highly accessible digital storage safeguards the content through redundant copies and supports rapid access to specific recording dates and times.
- More intelligence down to the camera level and much higher resolutions than analog CCTV systems.
- Distributed real-time access to video data (no central monitoring location required).
- Built-in mechanisms for authorized remote web browser access to video surveillance network. Once properly authorized, any network-attached client (wired or wireless) can view live images, manipulate cameras, and access recorded images over the LAN, WAN or public Internet.
- Ability to expand capacity to deliver additional lucrative IP-based voice and data services (e.g. IPTV, VoIP, Internet Access, Remote security monitoring options for tenants).

IP Network Video Surveillance Features:

Remote Access	You can access real-time video images at any time from any computer anywhere, saving time and traveling costs. The video can be stored at remote locations for convenience and/or security.
Flexibility	Place it anywhere. You can connect the product to a LAN, DSL, modem, wireless adapter or cell phone.
Functionality	Network can be programmed for a wide range of applications. More advanced functionality can be provided by our Application Developers.
Scalability	Designed to provide plug-and-play simplicity for small installations and flexibility for integration into larger, more professional applications.
Ease of installation	Off-the-shelf components comprise the entire video surveillance system, which reduces installation time/cost and simplifies network management.
Reliability	Several levels of password protection and a tamper-free network appliance design deliver the most reliable operation.
Future proof	Our use of open standard protocols and networks for communication means easy system integration with equipment from different manufacturers.

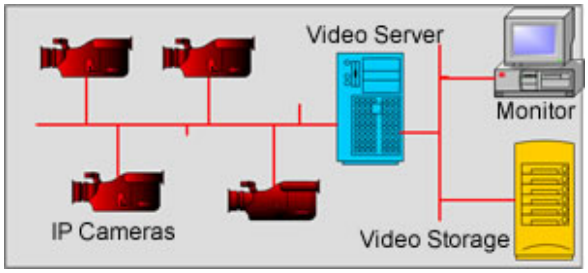
As described below, IP video surveillance can be deployed as a hybrid system that:

- Supports both analog and digital cameras.
- Provides IP-enabled video-capture points.
- Includes Application servers running software to process and manage video feeds.

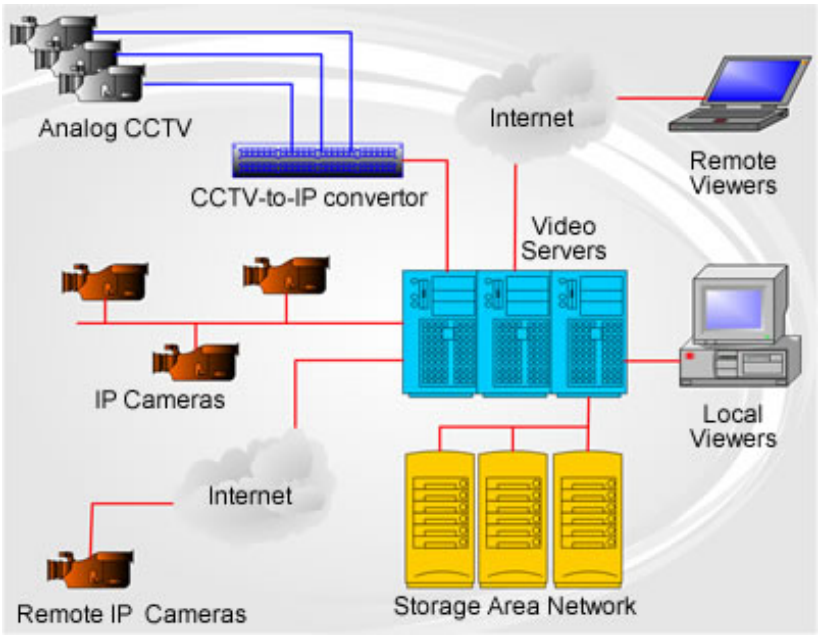


Existing analog cameras connect to the IP network via deployed analog-to-digital (A/D) encoders. These encoders digitize the analog video feeds, apply IP formatting, and then forward the resulting digital data to network video servers. Switches can be used to preserve network bandwidth.

Any new cameras added to the network will be 100% digital IP-enabled devices. These cameras include a host of enhanced features and can be re-located as desired simply by attaching to a connection point. Camera connections can be wired or wireless. Switches can be used to preserve network bandwidth.

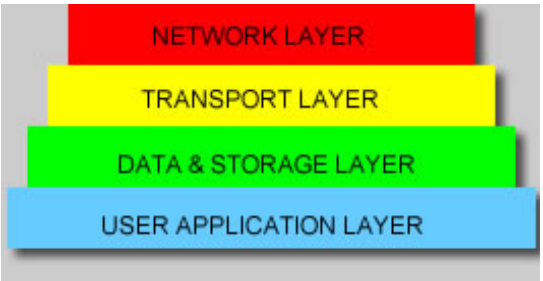


Video servers distribute archived and streaming video to networked users with the appropriate security privileges. Video feeds are routed to dedicated LAN-connected stations, remote users via the Internet and to a storage area network for storage and retrieval.



LAYERED ARCHITECTURE

Our IP video surveillance network design is based on a layered architecture that easily integrates with existing network infrastructure and provides maximum flexibility and control. This method entails the least cost and disruptions as network needs evolve and expand.



The Network Layer

The Network Layer provides the capture of the visible scene as the information input to the system, and the aggregation of this captured video on the network. Source components comprising this layer are camera placements and in the case of analog cameras, analog-to digital encoder hardware. The aggregated video streams are in digital form to enable easy and efficient transportation and storage. Passage of data to the next layer is in digital IP format.

The Transport Layer

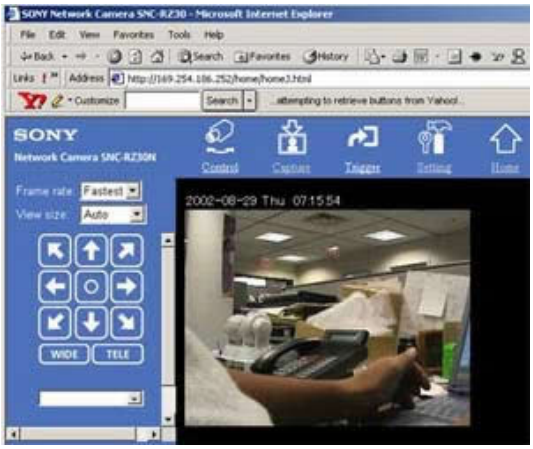
The Transport Layer is the IP network, configured for wireless and wired devices, enabling cost effective and flexible video transport. Components at this layer are primarily network infrastructure hardware devices such as wireless IP network transmitters, repeaters and receivers, as well as standard network components like servers, switches, routers, and firewalls.

The Data & Storage Layer

The Data & Storage Layer is a two-tier architecture for archiving digitized video streams at selectable frame rates. Components include distributed archive servers and a main video storage mechanism in the form of a Storage Area Network (SAN). By providing distributed auxiliary video storage on devices located closer to the cameras, backhaul bandwidth requirements can be significantly reduced and video capture rates increased.

The User Application Layer

The User Application Layer provides access to the video stored or captured by the surveillance platform, through an intuitive Web interface. The Web portal allows users to locate video sources for viewing live video or allows users to search for recorded video on auxiliary archive servers or the main storage area network.. The interface allows authorized users to capture stills and download clips to their local hard drives. The user interface also allows users to directly control Cameras equipped with Tilt / Pan / Zoom capabilities.



SUMMARY

For years, organizations installed closed circuit TV (CCTV) almost exclusively for security monitoring. CCTV, though, has many shortcomings. First of all, it's expensive and disruptive to install. Second, once installed, its capabilities are limited. CCTV records images on videocassettes, so police and other emergency personnel can't view the event live. Therefore, they often don't know an emergency is occurring or how serious it is. If they are informed of an emergency, these first responders can't understand its circumstances or context through CCTV. They see the event only after viewing the video, which is usually long after it's over.

However, remarkable technological changes have taken place over the past five years. For a relatively small investment, the security industry now has the opportunity to open up conventional closed CCTV systems using IP-based surveillance technology. The end result is enhanced personal safety and improved levels of security in our homes, work premises, schools, banks, and other public places.