Smart Government

Smart Life

Smart Industry

Challenges to Safe City Solution

Unclear

Untransportable

Unreachable

Insecure

Challenges to Safe City Solution

Unclear | **Untransportable** | **Unreachable** | **Insecure**

Monitoring site

Low resolution, low frame rate, unable to meet requirements

Central Office

High network bandwidth required

Huawei Safe City Solution

Clear | Untransportable | Unreachable | Insecure

Monitoring site

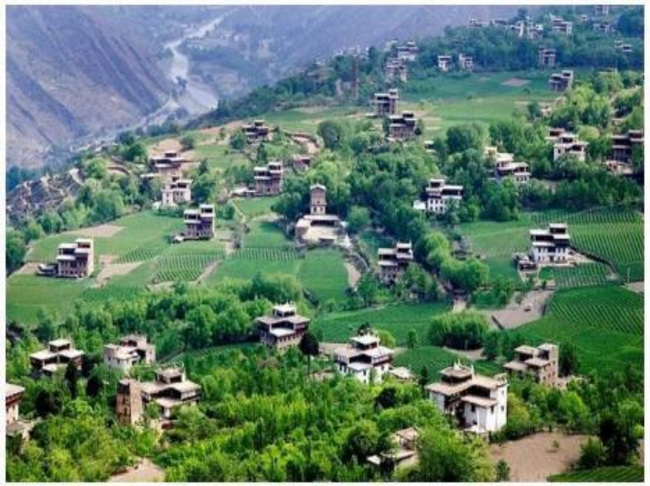
HD 1080p,
High frame rate 60 fps

Central Office

HD with low bandwidth,
Anti-loss 5%

Challenges to Safe City Solution

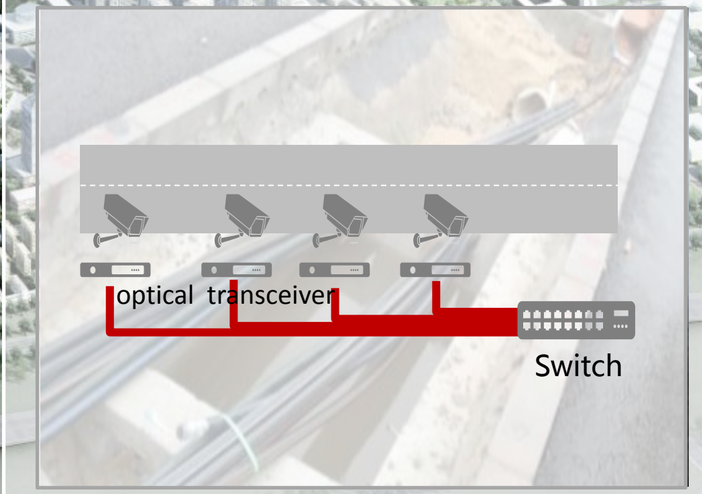
Clear | **Untransportable** | Unreachable | Insecure



Cabling is expensive in remote areas

Need wireless backhaul for CPE

Wiring is difficult for old cities



Direct optical connections waste fiber

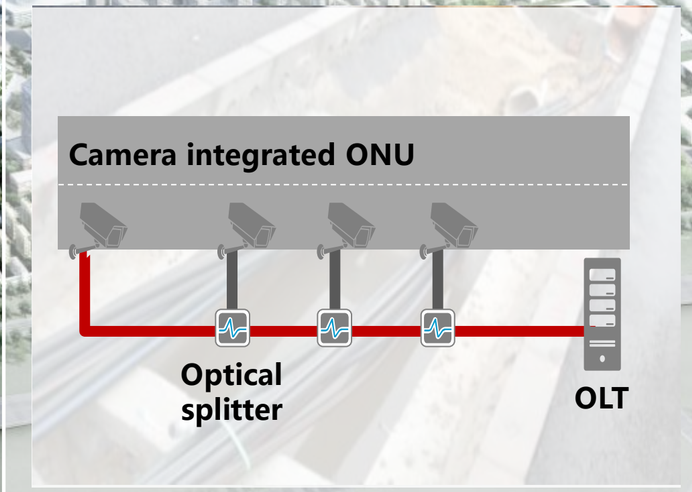
Huawei Safe City Solution

Clear | **Transportable** | Unreachable | Insecure

LTE (3:1) microwave

LTE camera,first in the industry

Oriented **Wi-Fi**, **2 km** coverage, low cost & easy to deploy



xPON access saves on use of fiber

Challenges to Safe City Solution

Clear | Transportable | **Unreachable** | Insecure

Diverse formats,
isolated systems
Cross-regional sharing difficult

A District branch

Massive amounts of video; manual search is inefficient

Hospital

A Vendor formats

Bank

A Vendor formats

School

A Vendor formats

Huawei Safe City Solution

Clear | Transportable | **Reachable** | Insecure

Cloud storage, compatible with different formats, makes sharing and global retrieval easy

A District branch

Improve efficiency by 70% with video abstract & content marker

Hospital

Multiformat compatibility

Bank

Multiformat compatibility

School

Multiformat compatibility

Challenges to Safe City Solution

Clear | Transportable | Reachable | **Insecure**

Public LAN, susceptible to intrusion

Inadequately shielded internal network security

Unencrypted video susceptible to leaks or theft

Huawei Safe City Solution

Clear | Transportable | Reachable | **Secure**

Access authertication
Transmission encryption

Strict isolation
Anti-intrusion
Active protection

Video encryption
Video watermark

Huawei Safe City Solution

Clear

Transportable

Reachable

Secure

Huawei Helps Telecom Operators Develop the Enterprise Market

Huawei Safe City Solution Around the World

Huawei Safe City Solution Serves

30 + countries

Low resolution

D1：Key information is unclear

Low frame rate

30 fps: Cannot capture the license plate when speed is above 160 km/h

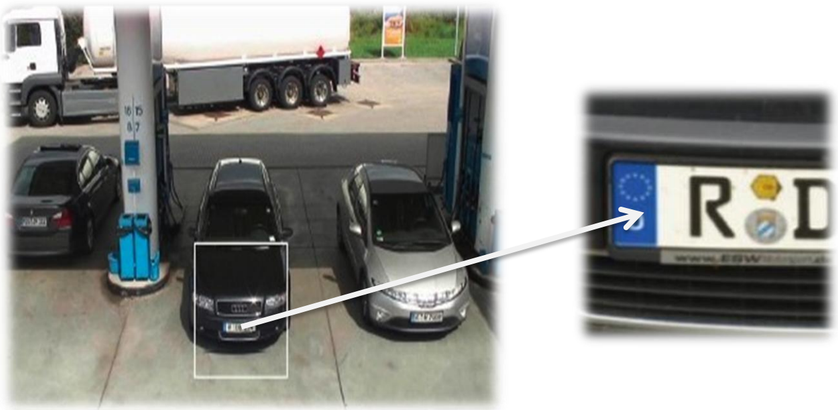
High bandwidth requirement

Industry average: HD video normally needs 4~8 M bandwidth

Poor anti-loss performance

Industry average: the image is unusable with 2-3% package loss

High resolution: 1080p



Zoom in on plate, number is clear

High frame rate: 60 fps

License plate can be captured under speed of 210 km/h

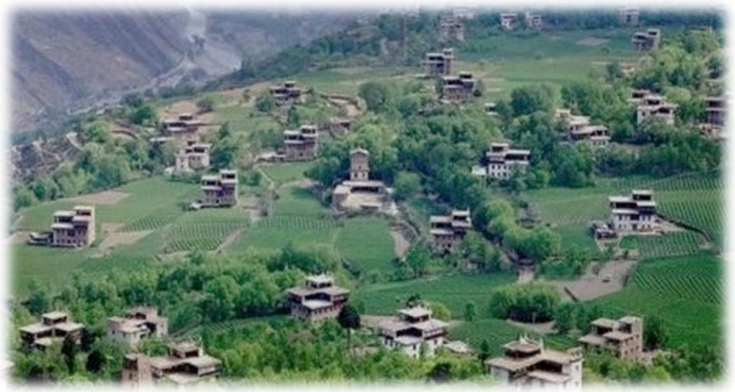
HD with low bandwidth: 2~4 M→1080p@30 fps

Ensure HD effect with low bandwidth

Anti-loss: 5% package loss has no impact

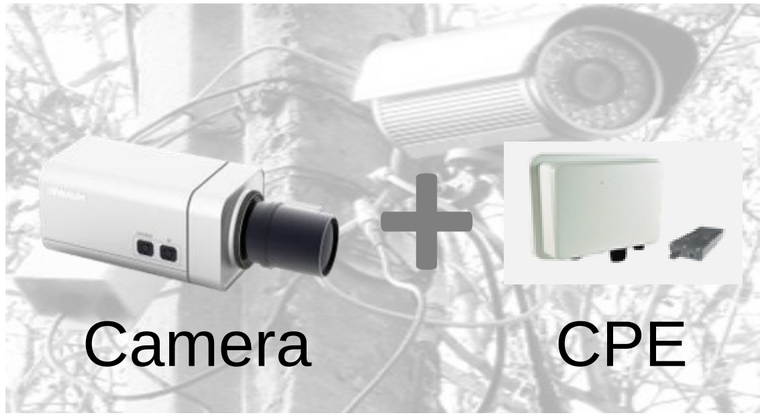
No impact on image under 5% package loss

Video is difficult to transmit from remote areas



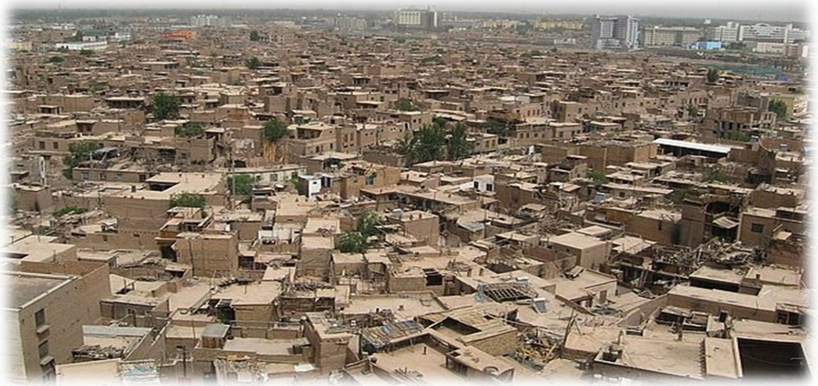
Few dispersed front ends,
cabling is very expensive

Wireless transmission needs CPE



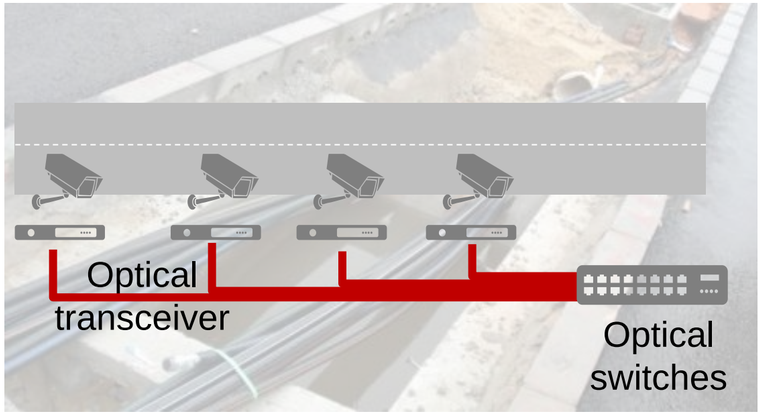
High cost, complex installation, high failure rate

Video is difficult to transmit from old cities



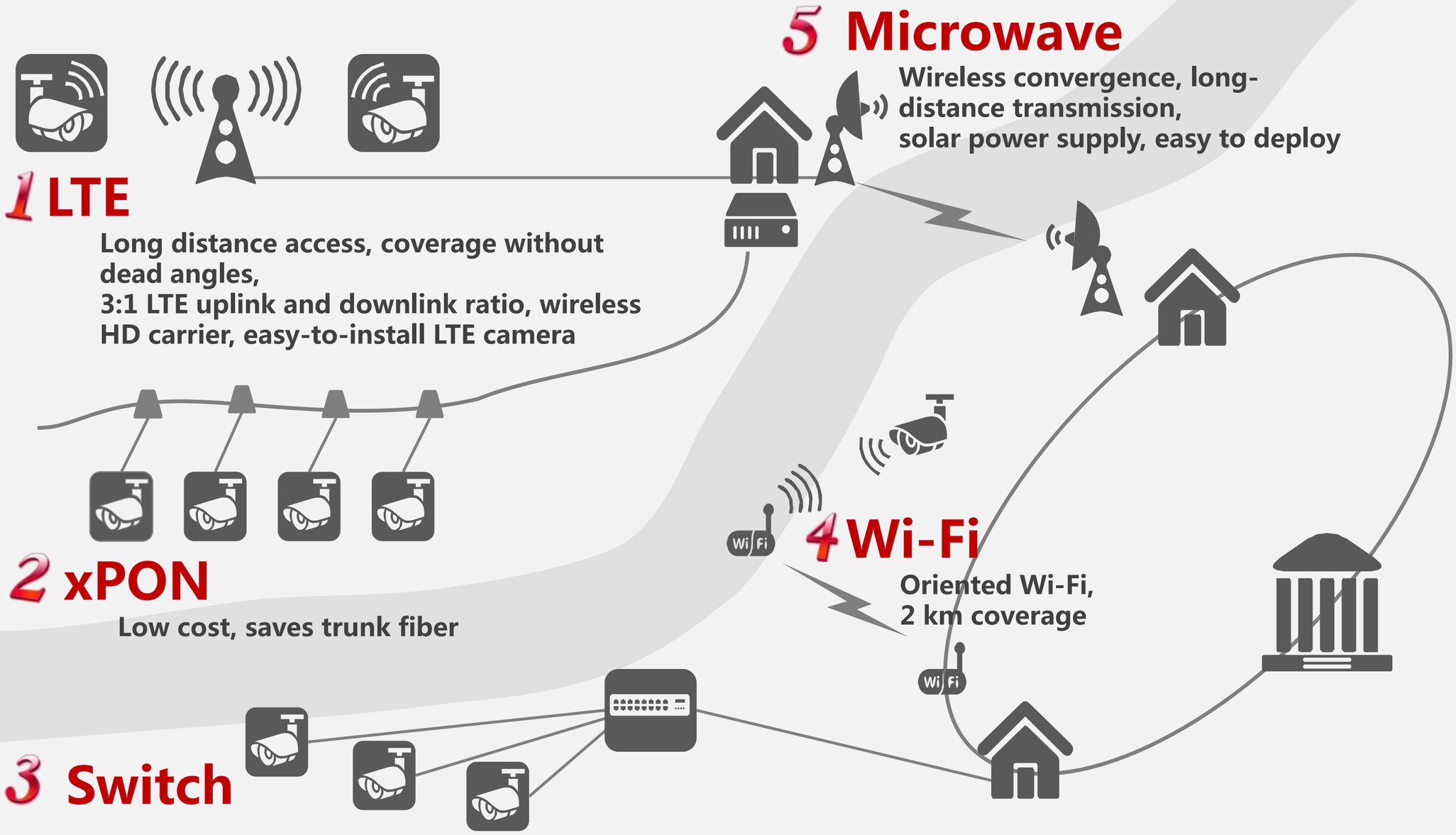
Reconstruction and wiring for video
transmission in old cities is difficult

Directly connected optical transceivers waste fiber



Traditional fiber network wastes fiber
cables

Completed access modes without dead angles



1 LTE

Long distance access, coverage without dead angles,
3:1 LTE uplink and downlink ratio, wireless HD carrier, easy-to-install LTE camera

2 xPON

Low cost, saves trunk fiber

3 Switch

4 Wi-Fi

Oriented Wi-Fi,
2 km coverage

5 Microwave

Wireless convergence, long-distance transmission,
solar power supply, easy to deploy

Isolated system

Difficult to share information and collaborate between branch offices

Various video formats

Video vendors use proprietary protocols, difficult to control from one console

Massive amounts of video are difficult to search

Labor-intensive, time-consuming, manual video searches

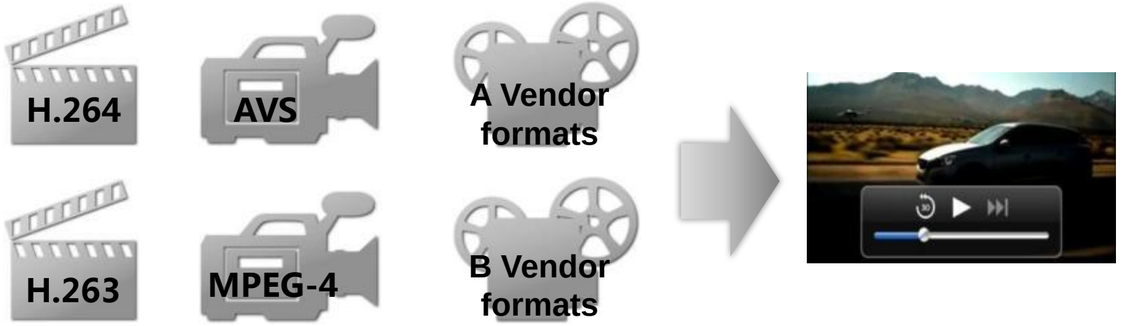
Unmarked video relies on artificial identification

Video records large amount of invalid information; artificial identification is inefficient

Cloud Storage

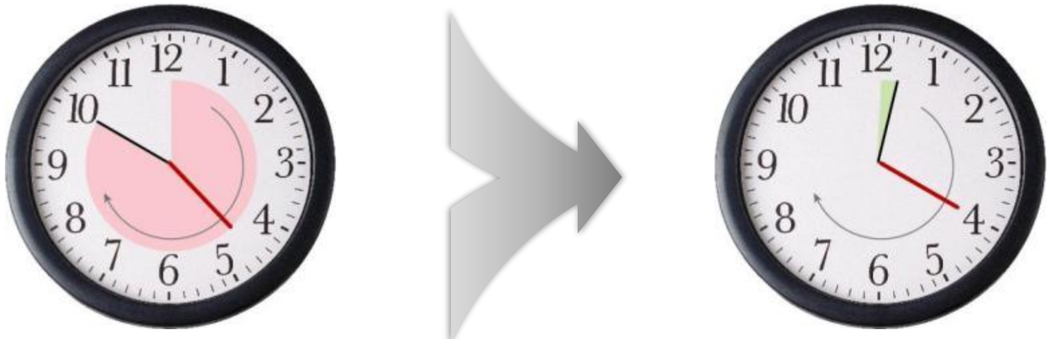
Distributed storage, using and managing video information across the city

Complete format compatibility



Client can play various video formats

Short abstract for long video



50 minutes of video

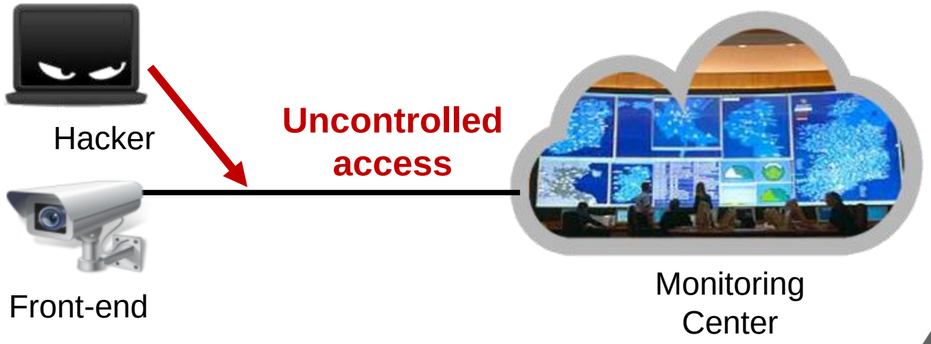
2 minutes of video

Abstract key information improves search efficiency

Marked video

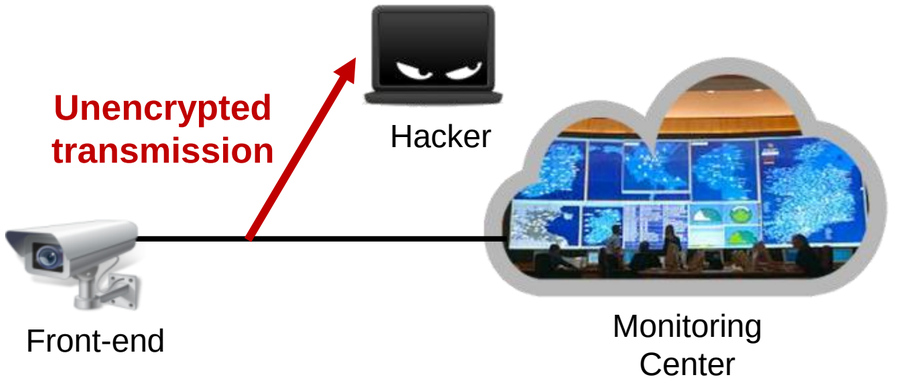
Mark video for efficient search

【See】Illegal access

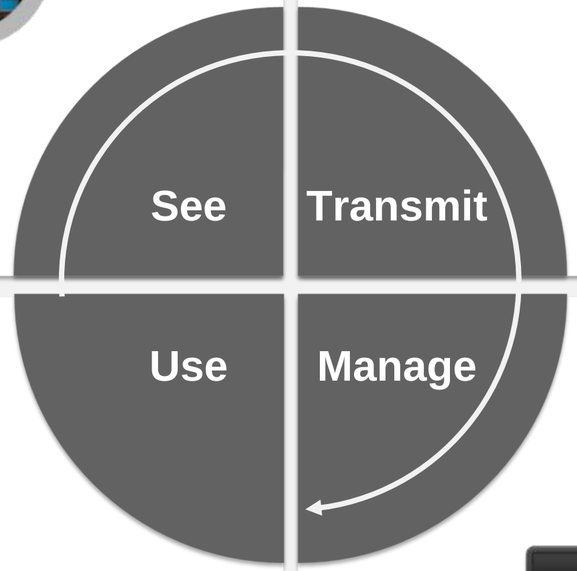


Harm: forge surveillance images

【Transmit】Stolen video



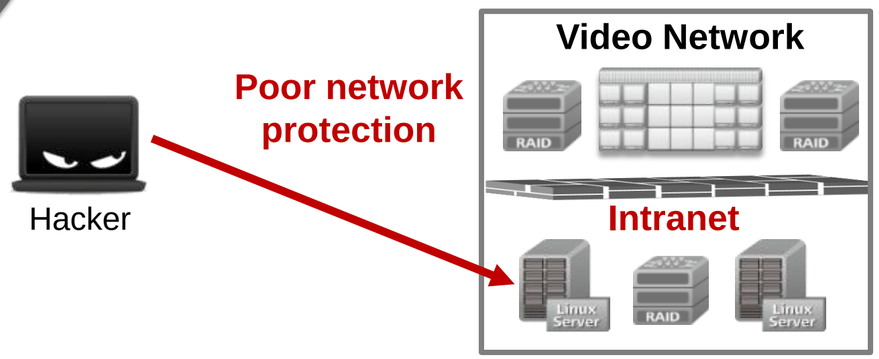
Harm: illegally obtain video information



Harm: steal information from important places

【Use】Steal video information

Harm: by intruding on video networks, hackers can invade internal business networks



【Manage】Invade intranets

Comprehensive guard keeps video secure

Control access

802.1x, PKI technology

Encrypt transmission

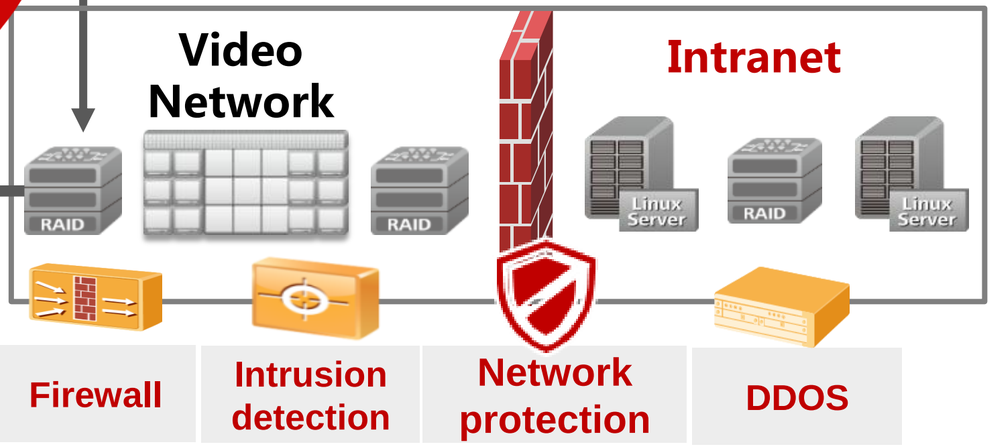
AES etc.
encryption algorithm

See | Transmit
Use | Manage

violator

Video watermark

Easy to trace hacker

Encrypt video

Prevents unauthorized viewing