Case study

IVS Technology

Overcoming CCTV blind spots with artificial intelligence and HP Workstations

Industry
Video Surveillance and Security

Objective
Overcome inability of traditional CCTV systems to automatically detect visual and sound anomalies

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Approach
IVS has chosen HP Workstations to deliver 24x7 security solutions

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IT matters
• Improved reliability of systems running IVS software 24x7x365

• Simple CCTV upgrade enabled by addition of HP Workstation with IVS software

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Business matters
• Real-time image analysis and restoration enabled through multi-core processing in combination with TESLA GPU

• Stability and durability to reliably drive IVS software 24x7

• Enhanced cost efficiency due to the ability of the HP Z Workstations to support the IVS solution simultaneously for up to 16 CCTV channels

"HP Workstations deliver stability, durability and credibility in the marketplace. HP technology delivers synergy with IVS Technology today and in the future."

– Young Hoon Bae, chief executive officer, IVS Technology

IVS Technology CO., Ltd. offers cutting edge artificial intelligence image and sound analysis that overcomes the limitations of existing closed circuit television (CCTV) systems. Its solutions, running on HP Workstations, can detect criminal activity and other problems previously undetectable by CCTV systems.

Crime, terrorism and natural disasters bring anxiety into everyone's lives. Despite advances in security technology such as CCTV surveillance, blind spots still exist. Individuals can always be exposed to unexpected dangers whenever there is a blind spot in CCTV coverage.

> "The CCTV artificial intelligence system from IVS Technology resolves the blind spot of CCTV and prevents unexpected incidents from happening."
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> — Young Hoon Bae, chief executive officer, IVS Technology

Young Hoon Bae, chief executive officer of IVS Technology, notes that the 2008 arson at Sungnyemun Gate, a national treasure in Korea, might have been prevented by the IVS Technology solution through its ability to detect activity in CCTV blind spots.

IVS Technology delivers security

"The CCTV installed at Sungnyemun Gate at that time was unattended and as a result, no one was able to detect the motion of the intruder. This mistake enabled an arsonist to perpetrate a crime resulting in staggering damage to a 500-year-old cultural treasure," Bae says. "The CCTV artificial intelligence system from IVS Technology helps resolve the blind spot of CCTV and can help prevent unexpected incidents from happening."

The total destruction by fire of Sungnyemun Gate cost 20 billion Korean won (KRW) in restoration costs. It also sparked public debate about security issues pertaining to cultural properties.

Following the incident, the IVS Technology solution was installed in 2012 at Heunginjimun, a leading South Korean national treasure. Demand for the IVS solution to protect national cultural properties and temples has also gradually increased. Today the IVS artificial intelligence solution is providing efficient crime and disaster prevention systems to protect schools, freeways, vessels, and various industrial estates.

IVS image analysis technology enables security personnel to take immediate action by delivering alerts in real time. The CCTV artificial intelligence system is more effective than human monitoring since its analysis can detect intrusion, violence and fire caused by individuals and vehicles.

IVS Intellectual Image Restoration Software transmits clean, clear, sharp images in real time by removing interference from weather-related issues such as snow or rain. It also improves poor quality images resulting from low light levels at night.

Sound source detection software detects abnormal sounds such as screams, vehicle impacts and explosions, through a sensor installed at the site. The software also determines the direction of abnormal sounds, and it automatically moves CCTV cameras toward the location. As a result, the IVS abnormal sound source software expands CCTV image security from what can only be seen to also include what can be heard.

Customer at a glance

Application
- Image analysis of CCTV using artificial intelligence
- Image restoration
- Detection of abnormal sound source

Hardware
- HP Z230 Workstation
- HP Z420 Workstation
- HP Z820 Workstation

Software
- IVS Intellectual Image Restoration Software
- IVS image analysis technology
- IVS sound analysis technology

HP recommends Windows.

IVS Technology software can be applied to all locations where CCTV is installed. It can diminish threats to human life and property due to intrusion, fire, violence, theft, automobile accidents, illegal disposal, and even individuals not wearing seat belts. The technology can also be applied to improve monitoring of crowds and heavy traffic.

"Another strength of IVS technology software is that it can easily be added to an existing CCTV system," Bae says. "Conversion to the intellectual image detection system can be accomplished simply through addition of a server loaded with the IVS technology system."

HP Workstations Selected

IVS Technology has selected HP Workstations to run its software. Systems typically are configured with HP Z230 and Z420 Workstations, and the HP Z820 Workstation is used for high performance applications. Hardware stability and durability are essential for software, and HP products show the most stable performance, says Bae.

"IVS has high confidence in HP Workstations," Bae continues. He says it is essential that the system hardware is capable of running the IVS solution 24 hours a day. "HP Z Workstations deliver with multi-core processing, supercomputing through the TESLA GPU, and superb image processing power."

Since the IVS solution requires simultaneous delivery and analysis of image data, workstation performance is very important. Before standardizing on HP Workstations,

IVS faced occasional server issues due to CPU overloading when the IVS software was in operation around the clock, Bae notes, but the stability and performance of HP Workstations has eliminated those issues.

A natural collaboration

As a result, IVS has certified HP Workstations to run its software. It says HP Workstations improve the reliability of its solution because the HP Workstation provides continuous after sales support. HP Workstations also improve price performance since they support the IVS solution for up to 16 CCTV channels.

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– Young Hoon Bae, chief executive officer, IVS Technology

"We believe IVS software is a leading solution of its kind," says Bae. "But even superb software requires solidly reliable, high-performance hardware in order to be effective. HP Workstations deliver stability, durability and credibility in the marketplace. HP technology delivers synergy with IVS Technology today and in the future."

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