



TESLA® CASE STUDY

IntuVision

Faster than Real-Time Intelligent Video Surveillance

Background

The use of video surveillance is growing dramatically in response to increasing global concerns about theft, violent crime and acts of terrorism.

In fact, research firm MarketsandMarkets projects that the global video surveillance market will [exceed \\$25 billion by 2016](#), as the technology is increasingly deployed for everything from military reconnaissance to theft control in high-end retail establishments.

New technologies are helping fuel this growth. This includes next-generation digital video capture, recording and streaming technologies that provide far superior quality than traditional analog video and magnetic tape-based systems, and greatly improve the ability of military, law enforcement and security personnel to identify and extract actionable data from video surveillance footage.

Challenge

Today most surveillance cameras record footage 24 hours a day, 7 days a week, yet there not nearly enough personnel to view and analyze the footage in real time around the clock, and determine what, if any, action should be taken.

In addition, most recorded video is only viewed to investigate an incident after it has occurred. And, analysts often require several days' worth of video from multiple cameras to evaluate and find leads, making it nearly impossible to uncover actionable intelligence in a timely manner.

Solution

[IntuVision's Panoptes software](#) harnesses the power of NVIDIA® Tesla® GPUs to accelerate the analysis of video surveillance footage. Panoptes uses IntuVision's patent pending GPU based video analytics technology. It features "intelligent" video analytics that can identify suspicious events, missing/stolen objects or a controlled area breach with a high degree of accuracy—often finding details in video

that humans wouldn't notice.

With GPUs Panoptes can evaluate large amounts of recorded video from multiple sources simultaneously, which is well beyond the horsepower available from conventional CPU-based systems.

A high end dual-CPU system can only analyze a single HD (1080p) video at 15 frames per second. Adding just one Tesla GPU to a CPU server accelerates the Panoptes software by 12 times.

With this added performance, 24 hours worth of HD video can be analyzed faster than in real time—in 1 hour—speeding the time to gather actionable intelligence by a factor of 12.

Impact

With GPU acceleration, Panoptes software enables military and law enforcement to more quickly identify more security threats with a high degree of accuracy.

Panoptes was recently used for post-event analysis from 29 video cameras around a major city center. With GPUs, the video was analyzed and indexed 3-5 times faster than on a comparable CPU-based system significantly reducing the analyst time.

"Enabling faster than real-time analysis of surveillance video has many applications from forensic investigations to collecting business intelligence data," said Dr. Sadiye Guler, founding president of IntuVision. "GPU acceleration enables analysts to get more information out of video in a shorter period time, greatly improving the time to analyze key information critical to resolving an incident, or collecting timely intelligence for security or marketing."