

# Criminals *caught on tape*

**Regional labs highlight  
Enforcement Expo video  
analysis presentation**

**"V**ideo analysis is the new DNA for law enforcement," says Grant Fredericks, a national video forensics expert and lead instructor to the Law Enforcement and Emergency Services Video Association (LEVA). "It is the next generation of investigation. Every police department in the country will have to have the ability to process video, just like they have police cars and officers have guns."

To aid in the processing and analysis of video evidence, and provide a conduit to link police agencies with related video evidence, the Department of Justice and the International Association of Chiefs of Police (IACP) have developed four Regional Forensic Video Analysis Labs. Located in Cincinnati, Ohio; Fort Worth, Texas; Raynham, Massachusetts; and a fourth location yet to be determined in the northwestern United States, these regional labs will be the topic of Frederick's presentation, "Pursuing a Regional Approach to Video Analysis," at the upcoming Enforcement Expo in Cleveland, Ohio, July 11-12.

## **Abundant evidence**

Since 9/11 the proliferation of video evidence has been tremendous. The average person in an urban setting is captured on video 20 to 100 times each day. And, Fredericks sees the United States moving in the same direction as the United Kingdom where there is one video camera for every two to three citizens. "There is a projected growth in the visual security industry of 13 percent per year, and I certainly don't see that waning at all," he says.

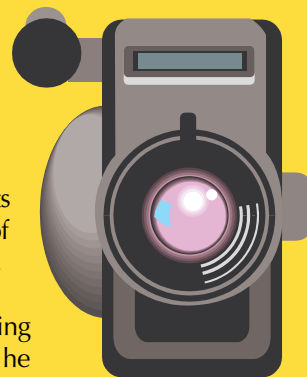
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Surpassing DNA, fingerprints and eyewitness testimony, “there is more video available to law enforcement in a crime that occurs in a public area than any other kind of evidence,” says Fredericks.

Even with this abundance of information, only approximately 1,000 of the more than 17,000 police agencies in the United States have forensic

## Challenges in the industry

According to Grant Fredericks, a national video forensics expert, the biggest challenge facing the video evidence industry is dealing with the more than 3,000 different digital recording technologies in use. “Each one of them has its own way of processing, outputting and encoding evidence,” he says. “Analysts have to be prepared to deal with an unlimited and overwhelming variance in technology.”



But Fredericks does not see a national standard as a solution to this problem, as this would limit the research, development and advancement of the technology. Instead, he sees the answer in the presidential directives on interoperability, which dictate a technology must be interoperable to receive federal grant funding. “A manufacturer can produce a proprietary technology, but then it needs to output to a standard file format that can be read by any Windows-based media computer,” he gives as an example.

Currently, many police agencies are choosing low-quality proxy outputs as the interoperable component. Because of this, much of the forensic value is being stripped from the video. Fredericks says the question to be satisfied is, “Does the output video accurately represent the truth of what occurred in front of the camera?” Despite the compression and alteration that may take place because of the interoperable component, the proprietary element, the original data recorded, must be available for later analysis and examination at trial.





## **“To Catch a Predator” host to keynote Enforcement Expo**

Chris Hansen, Dateline NBC news correspondent and host of the popular Dateline series “To Catch a Predator,” will keynote Enforcement Expo, a law enforcement conference and trade show slated for July 11-12 at the I-X Center in Cleveland, Ohio.



Hansen plans to discuss the “To Catch a Predator” program, which comprises a series of hidden camera investigations devoted to identifying and detaining potential pedophiles attempting to contact children over the Internet and meet with them for sex. The stories have been conducted as undercover sting operations with the help of online watchdog group Perverted Justice. Law enforcement officials have participated in this operation since the third installment of the show. Hansen will be available after the presentation to answer questions about the television program and Perverted Justice.

For more information on Enforcement Expo, visit [www.enforcementexpo.com](http://www.enforcementexpo.com).

speaks for itself” and “A picture is worth a thousand words.” “That is not true,” says Fredericks. “Video cannot speak for itself because the vast majority of video is either misinterpreted or the full value of the video is lost when it comes down to the analysis.”

This is especially a problem with digital, time-lapse video. “I’ve seen a lot of video evidence in which the compression and encoding process actually caused significant errors, placing people in positions they weren’t,” says Fredericks, who has his own private forensic video consulting firm, Forensic Video Solutions.

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As an example, Fredericks consulted on a case in which a Michigan police officer was charged with second-degree murder for shooting an unarmed man as the suspect approached the officer's vehicle. Video captured by a neighboring agency's in-car video system showed the suspect taking a step back just before he was shot by the officer. According to the prosecution, the video proved the victim was complying with the officer's orders and the officer shot him anyway.

Upon Frederick's examination of the video, he discovered an encoding error. "The system didn't know where to place the suspect as he was walking forward, so it recovered an image that had occurred a few moments earlier and just represented it, making it look like he had stepped backwards," he describes.

Fredericks demonstrated that all the motion, lighting and reflection artifacts, as well as every pixel, were the same between the two frames — something that only occurs when the second frame is a reproduction of the first. "This was instrumental in proving the video was inaccurate and was not what occurred, which is why the police officer made his decision to fire," explains Fredericks. "Had the video not been properly interpreted, that officer would probably be in jail today."

### **Rewarding work**

It is this Michigan case, and others like it, which makes Fredericks' work so rewarding. While traveling as the digital media consultant for the IACP's In-car Camera Project, Fredericks has been asked to consult on many homicides of police officers. "You'd be surprised how many police officers are murdered in the course of their duty and the amount of evidence which is captured on video," he says.

In cases in which there appeared to be no evidence initially, Fredericks has been able to identify suspects, vehicles of interest and other information which led to the identification, location and conviction of cop killers. "I've been able to help the video speak for the officer when the officer is not able to speak for himself," he says.

A former police officer, canine handler and coordinator of the Vancouver (British Columbia) Police Forensic Video Unit, Fredericks has lived law enforcement from many different angles, and this "is easily the most rewarding law enforcement job I've ever had." ■