Surveillance and VIPs

A close-up look at a new computer-based surveillance system and its implications

By Elliott Goldstein

Q What is the "video image processing" system and what are its legal implications?

A The video image processing (VIP) system is a computer-based video surveillance recording and retrieval system that automatically captures, digitizes and compresses high resolution video images of various types of transactions and events.[1] Any particular image can be retrieved using transaction, alarm or time period as the search criteria, and an onscreen menu permits selection of the trigger mechanism by transaction event or by contact.

The system consists of a video capture card and software, connects to standard video cameras and stores images on the hard disk of any Windows™-based PC. The images are 640x480 or 320x240 — in black-and-white or colour.

The "transaction" information is intercepted in real time. The resulting stored images can be accessed onsite or remotely via a point-and-click Windows interface. In addition, the retrieved images can be printed, faxed and e-mailed without a video printer.

The system offers other advantages, too. For example, the system uses the .jpeg compression method, which reduces size and bit rate without compromising the integrity of the picture. As well, the system can zoom in on key details to aid in identification.

The ability to tie the image to a transaction (via number or code) makes the system ideal for use with automated banking machines (ABMs).[2] The system can be programmed to record two images: the first at the time of request for cash by the customer; the second at the time the host bank dispenses the funds. If the two images show two persons, then the likelihood is that the first person was under duress when making the request or was robbed. Therefore, the second person is the perpetrator of the offence. It can also be used for recording the identity of persons cashing cheques or negotiating securities such as stocks, bonds, GICs and term deposits.

In addition to its many applications in the banking field, the VIP system can be used anywhere that digitized images can be keyed to transaction data. For example, the system has many applications in retail establishments where debit or credit cards are used, and at automated kiosks.

Once the images are recorded (with the transaction data) on the computer's hard drive, they can be "archived" for later use as evidence in court. Unlike other systems that copy data from the hard drive to a separate tape or cartridge, the VIP system archives locally within the computer database. The original image file is not erased and never leaves the hard drive of the computer on which it was originally recorded.

The archiving process does not involve making a duplicate of the original image; the computer's file allocation table is modified so the image is "moved" from one directory to another. The archived image cannot be edited, overwritten or tampered with while in the database. And, for chain of custody purposes, a log printout can be obtained from the software program.

The image can be "called up" directly from the computer on which it was recorded. However, to avoid the necessity of bringing the computer to court, the archival database can also be accessed directly from the courtroom at trial via telephone or cable modem. Of course, the prosecution or plaintiff would have to call an expert witness to explain this process to the court and to authenticate the images. The ability to dial up the system also permits the manufacturer[3] to perform supervisory services, including monitoring the surveillance cameras to detect any malfunction or misalignment.

Any concerns about the use of digitized video images of persons for identification purposes were laid to rest by a recent important decision of the Supreme Court of British Columbia.[4] It held that digital images extracted and enlarged from surveillance videotapes are admissible in Canadian criminal courts.[5] In the words of the learned trial judge, "digitalization is clearly a useful tool to assist the Court in viewing and comparing the videotape images."[6]

According to a recent article in *American Banker* magazine, the State of New York has recently enacted regulations in an effort to encourage banks to find ways to make sure image quality is being improved in ATM machines.[7] One such regulation requires that videotapes be re-used only 12 times and be discarded after one year of operation. The new regulations were apparently prompted by an attack captured by an ATM camera producing tape quality too poor to aid police.[8]

In general, saving surveillance images as computer files or on digital videotape (digital video storage) is seen by many as the storage method of the future because it permits repeated showings at the same quality without picture deterioration. In specific, the VIP system is especially well suited for the "transaction event" based market where the matching of images to transaction data greatly simplifies the recovery effort.

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Author's Notes

1 Special thanks to John M. Rogers, Peter Ranson and Frank Miglietta for providing product information.
2 Also known as automated teller machines (ATMs).
3 Frisco Bay Industries.
4 *R. v. Cooper*, unreported decision of The Honourable Mr. Justice Hood of the Supreme Court of British Columbia, Vancouver Registry docket no. CC99 1286, decision released March 2, 2000.
5 This case will be the subject of a future column in *Canadian Security*.
6 *R. v. Cooper*, above, at para. 77 of the unreported decision.
7 See *American Banker*, (02/01/00), p. 9, article by Helen Stock.
8 These regulations will also be the subject of a future column in *Canadian Security*.

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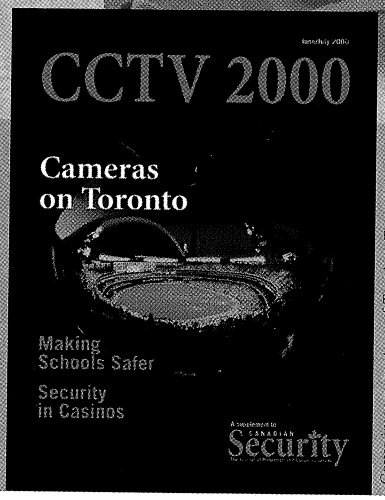

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