Corrections Technology Options Are Expanding

By Michelle Gaseau

Not long ago, even the idea of using a computer in prison administration was unusual. Now corrections officials who want to make their facilities run more smoothly are routinely employing the newest technologies, from automated records management systems to sophisticated tracking equipment.

"As you see technology become more affordable, you see it increasingly used to supplement sound correctional procedures," says Al Turner, Ph.D., of George Mason University, and a visiting scientist for the National Institute of Justice's (NIJ) Office of Science and Technology. "You are seeing a trend to utilize technology. One area that is high profile in corrections is telecommunications technology, which moves information and not people. Examples of this are telemedicine and video arraignment."

Turner, a former federal warden, says that corrections officials also are beginning to use technology as a man power multiplier. Technology is being applied in a variety of areas, such as perimeter security to reduce and/or eliminate the need for correctional staff positions. The biggest challenge, however, is implementing change in a correctional facility. "It's not the technology; it's getting people to use it," Turner says. "If you want to be successful in using technology as a correctional manager, you have to understand this."

The following provides an overview of some of the latest technologies to be implemented in the nation's prisons and jails.

Video Technologies

Telemedicine enables doctors to diagnose inmates remotely through the use of real-time video. Several correctional agencies already use the process to varying degrees. Use in psychological evaluations is one of the most common applications. Those who use it have found that by enabling inmates to be medically evaluated without leaving the facility, they can reduce costs and improve public safety while providing effective health care.

NIJ, in conjunction with the Department of Justice and the Federal Bureau of Prisons (BOP), recently completed a demonstration project to test the benefits and effectiveness of telemedicine. The demonstration produced two products for use in corrections: 1) a turn-key telemedicine suite with a training package; and 2) an impact assessment, quantifying the cost benefits of telemedicine and providing a model to develop various applications of telemedicine. According to Turner, the demonstration project has shown that technology costs are falling, which means telemedicine is increasingly affordable.

Other agencies are using similar technologies to save time and money. The Hampden County, Mass., Correctional Center has used videoconferencing technology to reduce the number of inmates transferred to court for routine hearings. Paula Audette-Leven, manager of the Legal Resources Department and chair of the Hampden County Video Conferencing Committee, says the program helps in a number of ways to reduce costs. "It helps to speed up the classification process and free up high security bed space that is more than double the cost of minimum security space," she says.

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With the video technology, an inmate with an open warrant from a surrounding community is placed on the videoconferencing list. The judge can recall or resolve the warrant, appoint counsel, schedule a trial date or resolve the case all in one day. The equipment is permanently installed in the courtroom with a remote control and a mute capability.

Hampden County bought its own equipment and used existing fiber optics to run the technology, at a cost between $7,000 and $10,000 per site. The cost for commercial packages can run as high as $90,000.

Security and Surveillance

Watching inmates and predicting their behavior is critical for administrators to manage their institutions well. There are a number of technologies that can help an agency do this.

The Pennsylvania Department of Correction, with the help of an NIJ grant, recently tested the effectiveness of new drug detection/hair analysis technologies. The study measured the prevalence of drug use within the prisons by taking urine and hair samples from 1,000 inmates at five state prisons. Officials found the use of hair analysis to be more effective and crucial to the study. Research has shown that while urine retains a two- to three-day history of drug use, a sample of hair reveals any drug use within three months prior to the test. Hair analysis provides a more accurate method for correctional administrators to assess the prevalence of drug use.

Other tracking and detection technologies are being developed and tested nationwide. They include:

- Tracking transmitters by Orion Electronics, Ltd. provide radio frequency direction finding (RFDF) for des-

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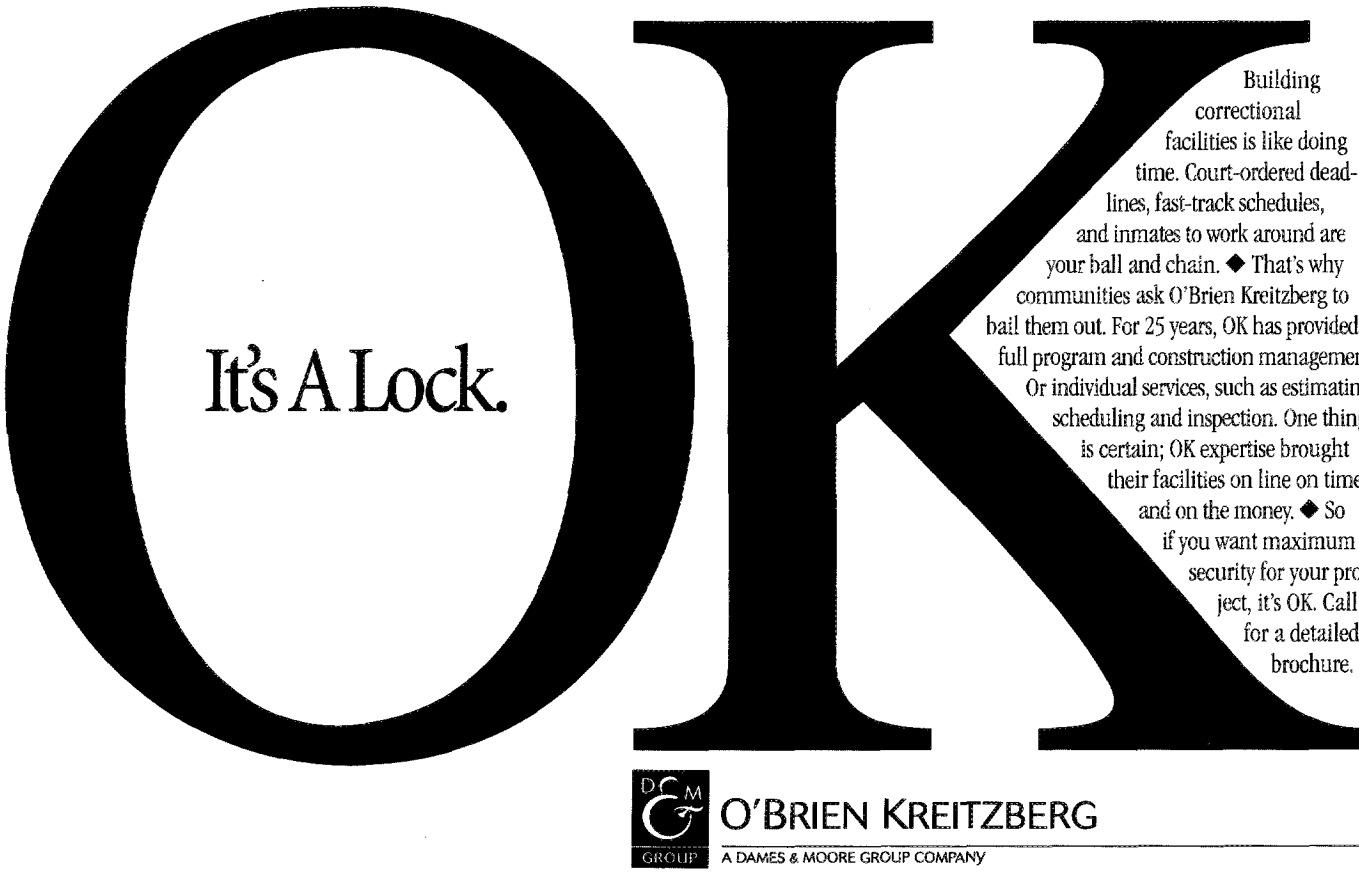
ignated targets, such as escaped offenders or offenders on house arrest. A small transmitter is installed on the target. It sends out a pulse at regular intervals on a set frequency. An RF receiver determines the direction of the transmitter in relation to the investigator. The display shows the investigator how to find the transmitter and the target. Orion's T22 miniature transmitter has a motion sensor that changes the pulse from a slow rate at rest to a fast rate when the target moves. According to Craig Emerson, a retired veteran of federal law enforcement and a principle of Emerson Technical Consultants, this device, as well as those that use Global Position Satellite System (GPS) technology, is another tool that helps agencies better utilize their surveillance resources.

- Explosive/drug detectors from Ion Track Instruments can reduce contraband. The BOP, National Guard and U.S. Customs all use this technology. The ITEMISER Contraband Detector detects trace particles and vapors from all narcotics and explosives. It can change from detecting narcotics to explosives in 10 seconds, and comes in a compact 45-pounddesktop instrument. The ITEMISER typically is used for screening visitors. When contraband is detected, an alarm sounds, the panel flashes and the substance is identified.

- Field monitoring involves the use of a device that is connected to the offender's telephone; the offender wears an ankle bracelet or similar device. If the offender leaves the restricted zone, the device alerts the central monitoring agency. It also notifies the agency if the offender has not moved. "Essentially it monitors absence and presence," says Anita Pedersen of BI Inc., a manufacturer of electronic monitoring devices. "If the offender is still at home and we know that he or she is supposed to leave for work at 7 a.m., we can notify the case manager immediately."

- GPS is a constellation of 24 satellites orbiting Earth that transmits continuous signals. This technology is combined with land communication, computer networks and wireless communication to enable correctional agencies to track an offender's movements from home, work, leisure and then back home. Like field monitors, the offender is required to wear a GPS tracking unit, which can track the offender to a precise street location. The developer is Advanced Business Sciences Inc. "With GPS, we can do periodic or full-time monitoring. We can even tell if the offender enters a bar because we have entered the longitude and latitude coordinates," says Jack Lamb, president and CEO of ABS.



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Automating Management Tasks

By automating routine procedures, such as scheduling and visitation, corrections staff can be more efficient and safer in their jobs.

The Shelby County, Tenn., Sheriff's Department reduced overtime expenditures by $150,000 with a computer interface for scheduling and personnel databases created by Justice Data Systems of America. The program operates by developing a staffing model and then carrying it out in an automated roster management system.

Inmate visitation is required in all correctional agencies but it can become difficult to manage. One facility in Colorado, however, is working on a way to automate and simplify the process. The automated visitation system, created by the Arapahoe County, Colo., Detention Facility and AMA Technologies, will allow visitors to call and schedule dates and times for visits and enter an identification (ID) number (the last four digits of the photo ID that will be presented upon arrival) to confirm.

This system will be integrated with a televisitation system at the facility. The visitor will arrive at the facility at the scheduled time, enter by a separate entrance into a visitor reception center and sit at a 27-inch interactive screen to visit with the inmate, who will sit at one of 80 video stations throughout the facility.

Inmates in the infirmary who once had to be transported to booking for a visitation, will be able to sit in their beds and have visitation directly from the infirmary. Because the system is considered an inmate benefit, the cost will be covered by inmate welfare funds.

A technology that has become popular in probation offices is AutoMon Corp.'s PAM System. The PAM System provides kiosk reporting technology and automated interviews of probationers. AutoMon's system has an interview kiosk and an enrollment and report computer workstation, which includes a laser printer, fingerprint scanner and card reader. AutoMon's business partner, IBM, installs the PAM System and provides on-site maintenance. Additionally, AutoMon provides on-site training, toll-free technical support and continuous system upgrades at no cost.

Communication

Communication is another area with important and recent technological advances. Personal alarms are designed to offer a higher degree of safety for correctional officers who are involved in dangerous situations inside a facility and need immediate backup. The products on the market come in several versions based on the audio frequencies they use.

The Audio Alert company's system operates with high frequency signals. The officer wears a transponder, a device smaller than a radio. When the officer activates the transponder, receivers installed throughout the facility receive a signal, and send it directly to the primary computer at the dispatch center.

"We literally have no dead spots, which often occur with [lower frequency] radio signals," says Dave Vincent, president of Audio Alert. "There's so much steel ... in prisons that it inhibits the signals. We went to spread spectrum technology at 900 megahertz. At the lower frequencies, the Federal Communications Commission dictates the size of your radio band but with 900 megahertz, you can go as big as your technology allows."

The Audio Alert computer updates information every 90 seconds, so information is fresh. When it receives a distress signal, the system automatically notifies the four officers closest to the signal's location.

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Dominion Wireless Inc. also has a personal alarm location system (PALS) for corrections. The PALS system works on radio transmissions. A personal alarm transmitter is a miniature body-worn transmitter that works in one of two ways. If an individual is to be continuously tracked, the transmitter constantly emits a radio frequency signal. If the individual is to be located in emergencies, it transmits only after the wearer deliberately activates it by depressing a panic button mounted on the housing. The system can be adapted to locate a wide variety of personal communications devices, such as walkie-talkies, cellular phones and two-way pagers.

PALS sensors permit data transmission over existing AC power lines. No dedicated cabling is required, so installation time and cost are lower. According to Roger Christ, president of Dominion Wireless, the PALS system is accurate to within 20 feet and unaffected by clothing or building materials.

According to NIJ's Al Turner, the agency is developing a generation of personal body alarms that will give a precise location of the wearer. However, "overcoming the engineering and cost issues, particularly those associated with older prison construction, may slow the products' entrance into the field," Turner says.

Identification

Several new identification technologies are being tested by correctional agencies around the country. Battelle Memorial Institute is collaborating with the Ohio Department of Rehabilitation and Correction (DRC) and NIJ to develop an enhanced system for prescribing, dispensing and administering medication to prison inmates. The cen-

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terpiece of the enhanced system is "smart card" Technology.

Smart cards are photo identification cards containing embedded computer chips that electronically store inmates' personal identification and medical information. The immediate availability of up-to-date medical and pharmaceutical information provided by smart cards is expected to improve the continuity of medical care and patient medication compliance. The technology also should improve the timeliness, transferability and accuracy of valuable medical information — Which also should improve diagnosis and treatment, regardless of patient location. In addition, the technology will save time administratively. According to Chuck Burkhart, projects manager at Battelle, during the Ohio DRC's pilot, the test facility had a 30 percent decrease in the time required for pill call.

When an inmate's smart card is inserted into a reader, that inmate's medication history is displayed on a computer screen. Any administration of medicine is entered into the record electronically, including the date and time of the dispensation — Information that can be retrieved at any time by the institution's medical staff. Costs for the technology are $8.88 per card; readers are $59; and handheld readers cost $8,000. For the pilot, hardware and software cost $125,000; systems engineering costs were $175,000; conversion costs, $50,000; and support costs another $50,000.

Another technology currently being used in gang invetigations is a facial recognition database software developed by Visionics Corp. Visionics received a grant from NIJ to develop a prototype that will be integrated into the existing Gang Reporting Evaluation and Tracking (GREAT) infrastructure. The Los Angeles County Sheriff's Department developed GREAT. The system adds an ability to query the GREAT database for matches with a photograph, thereby circumventing the false identity cards and information that often are presented by gang members. Additionally, this system will accept Internet-based queries of the GREAT database fromany location, even laptop computers in police cruisers.

Conclusion

Knowing about the correctional technologies on the market is a first step, but administrators have two important tasks: to show that technology can save precious agency dollars and to convince staff that technology will help them do their jobs.

Turner said that NIJ has a number of initiatives to provide information about technologies for corrections and their applications, but officials should also do some homework themselves. "I would encourage anyone who attends [corrections] conferences to go to the technology tracks. We want to develop technologies that are meaningful and affordable for corrections. Both are major issues. We don't want to develop technologies that are not going to be useful and affordable," Turner says.

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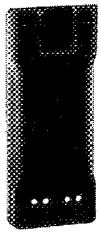

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