



## No License To Steal

*Patrol officers are familiar with the routine; keying in a license plate number and waiting for the database to notify them of any alerts against the plate. A two-officer patrol team might run 100 or so license plates during a shift and, with luck, get a hit now and then. But now, using automatic license plate recognition technology, officers can run thousands of plates a day.*

License plate recognition is an image-processing technology that reads a vehicle's license plate, according to Tim McFadden, a project manager at the Office of Law Enforcement Technology Commercialization (OLETC), a program of the Office of Justice Programs' National Institute of Justice. OLETC offers commercialization assistance to companies that develop technologies and products for the public safety community.

"Once a license plate is read," McFadden says, "any number of applications are possible, such as allowing a vehicle access to an area, monitoring its entrances and exits, or checking it against databases tied to license plates. Currently, license plate readers are most often used in security and traffic applications for access control, but they are gaining in popularity due to availability of inexpensive cameras, smaller and more powerful computers, and the expanding need for security. The technology is increasingly being found in the areas of homeland security, tax enforcement, asset protection, special investigations, and fleet management."

According to McFadden, recent advances in data and technology have enabled vendors to develop new systems that can help law enforcement locate stolen vehicles, respond to AMBER Alerts and protect children from potential predators, and provide more effective border security.

The typical automatic license plate recognition system uses infrared light to illuminate a plate even in dark conditions. A high-speed camera photographs the plate, which is analyzed and compared with a database. The system alerts officers to any matches. Older scanning systems used a trigger mechanism, but newer systems can continuously run in the background. These systems received a boost in 2004 when the FBI's National Crime

Information Center created a process to provide agencies with a data extract, updated daily, of stolen vehicles, stolen plates, and wanted individuals for use with the systems.

The most obvious use for such systems is combating the \$8 billion-a-year auto theft problem in the United States. The Pennsylvania Auto Theft Authority administers an insurance-funded program that supports auto theft units in Pennsylvania. Roy Miller, director of the authority, says that all participating departments are enthusiastic about the technology.

"In all instances, when they go out to test this technology, they are coming back with hits," Miller says. "This technology is going to knock auto thieves on their heels. Technologically, this stuff is ready."

### AN L.A. EXPERIENCE

Because California's Los Angeles Police Department (LAPD) has fewer officers per capita than other major cities such as Chicago or New York, Charlie Beck, assistant to the director, Office of Operations, is always on the lookout for technology solutions to help officers work more effectively. Knowing about the license plate recognition systems in place in Great Britain and Western Europe, Beck decided such a system could become a great tool for the department.

Beck, a former division captain, originally used grant money to purchase a system for his division. It worked so well that it helped earn him a promotion and the task of finding technology for the entire department.

"It offers huge advantages over the way we currently do it," Beck says. "Even on a good day, a 2-person car can run 100 to 120 plates. With this system, we can scan upward of 1,000 plates an hour. The results have been pretty spectacular. An officer who tries to specialize in finding stolen plates might find one or two a month. With this technology, we sometimes get two or three a day."

*Continued on page 2*

**An L.A. Experience** (continued)

LAPD received technology demonstrations and evaluated equipment from four vendors and is now working on a request for proposals (RFP) to design its own system. Beck says LAPD would like a more user-friendly system for less technology-savvy officers. However, he says, the technology portion already works well. Cameras mounted in five field-test vehicles continuously scan lanes on the right, on the left, and in front of the car, comparing them with the 110,000 entries in a California Department of Justice database of stolen vehicles that is updated daily.

“This is something we’re really excited about, how many major crimes could be solved by applying this technology,” Beck says. “Parking checkers could use this instead of making chalk marks on tires. Fixed cameras could be installed in high-crime areas. It could be a huge tool in shopping malls, where we could drive through the parking lots and possibly find stolen vehicles. The law enforcement applications are just tremendous.”

Beck plans to have the RFP for LAPD’s system out to companies soon. He hopes license plate reading systems can one day be combined with in-car video, making police cars even more effective “offices.”

**For more information on the Los Angeles Police Department’s experience with license plate recognition technology, contact Charlie Beck at [smartcar@lapd.lacity.org](mailto:smartcar@lapd.lacity.org).**

Sgt. George Jacobs of the Maryland State Police heads the 34-officer Washington Area Vehicle Enforcement Unit (WAVE), a multijurisdictional task force that fights auto theft in Washington, D.C., metropolitan area. Jacobs says the WAVE unit field tested systems from five vendors before buying one, noting that, “We recovered 8 cars, found 12 stolen plates, and made 3 arrests in just one shift during field testing.”

Automatic license plate recognition can also help police locate individuals who venture into prohibited areas, such as convicted sexual predators who come too close to a school or someone who comes too close to a residence in violation of a restraining order. Systems can call on integrated global positioning system (GPS) capabilities to issue an alert if an offender’s license plate is located in a restricted area. If license plate images and GPS locations are saved, that information can later be mined to create a list of potential witnesses and suspects.

Although the technology has many potential uses, it faces both technical and legal challenges. Technical challenges include differentiating between license plates from different States and dealing with obstructions. If two

The following table lists providers of automatic license plate recognition systems in the United States. This listing may not be inclusive nor does it constitute product endorsement by the National Institute of Justice or the U.S. Department of Justice.

COMPANY	PRODUCT
AutoVu Technologies <a href="http://www.autovu.com">www.autovu.com</a>	AutoPatrol™
Civica <a href="http://www.platescan.com">www.platescan.com</a>	Platescan™
DataWorks Plus <a href="http://www.digitalcrimescene.com/tagnabit.htm">www.digitalcrimescene.com/tagnabit.htm</a>	TAG-NABIT
Extreme CCTV <a href="http://www.extremecctv.com/home.php">www.extremecctv.com/home.php</a>	REG-RX-M1™
G2Tactics, Inc. <a href="http://www.g2tactics.com">www.g2tactics.com</a>	GLAVID™
Pips Technology <a href="http://www.pipstechnology.com">www.pipstechnology.com</a>	Pagis™
Remington Elsag <a href="http://www.remington-elsag.com">www.remington-elsag.com</a>	Mobile Plate Hunter

States have issued “ABC-123” as a license number, the system might issue an alert on a car from State A whereas the stolen vehicle is from State B. Vanity plates are especially susceptible to this problem, so officers must confirm alerts before acting on them. Trailer hitches, ice and snow, and plate covers can obstruct the camera’s view. Generally, if an obstruction prevents an officer from seeing the numbers and letters on a plate, a license plate reader will not be able to “see” it either.

McFadden notes other technical considerations in choosing a system. “Agencies considering purchases need to think about the types of vehicles they use, whether they want to maintain data for further analysis, and how frequently they plan to use their system,” he says. “For instance, certain systems require permanent mounting. If the department does not plan to dedicate a vehicle to license plate reader use, they should consider purchasing a portable unit. On the other hand, some

**The National Law Enforcement and  
Corrections Technology Center System  
Your Technology Partner**

**[www.justnet.org](http://www.justnet.org)  
800-248-2742**

agencies may plan to mount fixed units at toll booths or on highway overpasses, or use mobile units for covert operations.”

Legal challenges include privacy concerns as well as possible misidentification. “Every agency needs to make sure that it has a clear privacy policy and that it follows that policy in using this technology,” says Chris Miles, NIJ senior program manager. “Used correctly, this technology has the potential to remove concerns over profiling of drivers because it analyzes every license plate seen, without concern for who the driver is.”

Miles also warns agencies to be careful when using technology that connects a person’s identity with a license plate number. The driver or passenger may not be the registered owner or the person for whom a warrant was issued, or out-of-date data may lead officers to stop a legitimate vehicle owner for operating a stolen vehicle. Officers therefore need to match not only the license plate, but also the driver’s identity before making a stop. Other policy considerations that Miles notes include probable cause for stops, data retention, evidence handling, and training.

In the end, Miles says, “Even though the systems still have some drawbacks, more and more law enforcement agencies are considering their purchase as an investigative tool.”

***For more information regarding license plate reader technology initiatives being conducted by the National Institute of Justice and the Office of Law Enforcement Technology Commercialization, contact Tim McFadden, 888-306-5382 or [tmcfadden@oletc.org](mailto:tmcfadden@oletc.org).***



This article was reprinted from the Spring 2006 edition of *TechBeat*, the award-winning quarterly newsmagazine of the National Law Enforcement and Corrections Technology Center system, a program of the National Institute of Justice under Cooperative Agreement #2005-MU-CX-K077, awarded by the U.S. Department of Justice.

Analyses of test results do not represent product approval or endorsement by the National Institute of Justice, U.S. Department of Justice; the National Institute of Standards and Technology, U.S. Department of Commerce; or Aspen Systems Corporation. Points of view or opinions contained within this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, Bureau of Justice Statistics, Office of Juvenile Justice and Delinquency Prevention, and Office for Victims of Crime.