



OLETC: What's New

Handling packages that may contain explosives, monitoring restricted drivers, running comprehensive searches of multiple databases, translating languages with a machine, or making a firefighting tool from Austria useful as a less lethal weapon . . .

On any given day, the Office of Law Enforcement Technology Commercialization (OLETC) in Wheeling, West Virginia, assists inventors and innovators in the development of new products and technologies for public safety agencies large and small.

Here are just five technologies that may soon be helping law enforcement and corrections personnel do their jobs more safely and efficiently.

Bumping the Bomb Squad

"Dealing with a package suspected of being a bomb is obviously slow and tedious business," says Wayne Barte, OLETC senior project manager. "The bomb technician directs a robot, which crawls along like a fast turtle, to reach the object and then uses a battery-powered tool carried by the robot to work on the object, which could be a box, backpack, pipe under a car, or piece of soft luggage. Naturally, the technician wants no unnecessary delays or problems, such as those caused by a drill that delivers too little torque or a saw that cuts poorly because batteries are running low."

According to Barte, two veteran bomb technicians and members of the Birmingham (Alabama) Police Department designed and patented a "bump" switch to avoid this problem. The switch, an addition to the on-off switching mechanism of a power tool, negates the need to keep a tool turned on while it is being transported to the target. From a safe distance, the technician simply makes the robot bump the switch to turn a tool on when needed and off when not, thus conserving valuable battery power.

OLETC assistance with this project has included help with developing a commercialization plan and identifying a manufacturer willing to make a small item in small runs for a relatively small market, Barte says. Only a few bump switches exist now, but an adequate supply may be available in a year. Unit cost is expected to be very modest.

Monitoring Restricted Drivers

A company's applied-technology division in Virginia is developing a sensing and surveillance system that can monitor drivers whose licenses have been restricted, suspended, or revoked. The License Sanction Enforcement System (LSES™) consists of two parts: the sensors worn continuously by each sanctioned individual and a data-collecting operation run by an LSES contractor. The pair of sensors, strapped on either the wrists or the ankles, detects the distinctive motions associated with driving a vehicle and records the data. The LSES contractor, working in cooperation with law enforcement authorities, periodically downloads the data, which show whether the offender has been driving, and sends it to the appropriate authorities for review.

"The potential benefit of this system is easy to understand," Barte says. "Improved monitoring of sanctioned drivers would directly improve roadway safety. The system would be highly useful to jurisdictions throughout the country, and the offenders could be required to bear the cost of the sensors."

The developer received commercialization assistance through OLETC's Commercialization Workshop™ and its 24-member advisory council composed of law enforcement experts and scientists. The system, which is not yet perfected or patented, amounts to a product and a service that could be available in a year or two, Barte says. The cost would probably be calculated according to the size of the jurisdiction using the system, but it is too early in the development process to offer a cost estimate.

Finding With FINDER

“How important is information sharing to public safety? Consider the case of Mohamed Atta, leader of the September 11 hijackers,” Barte says. “On July 5, 2001, Atta was stopped in Palm Beach County, Florida, for speeding and was let go with a warning. A few weeks earlier in neighboring Broward County, police had issued a warrant for his arrest for failure to appear in court on an invalid-license charge, but the police in Palm Beach County had no easy means of checking relevant records in the county next door.”

Subsequently, Barte says, the University of Central Florida in Orlando collaborated with the State’s sheriffs and police chiefs to design a statewide computer network known as the Florida Integrated Network of Data Exchange and Retrieval (FINDER™). This secure network allows officers to search databases throughout the State and to conduct queries about property, motor vehicles, pawnbroker transactions, and persons and their known associates. An appealing characteristic of FINDER, Barte says, is that it links many data-contributing agencies throughout the region being served while allowing each agency to retain ownership and control of its records. FINDER, a project funded in part by the Office of Justice Programs’ National Institute of Justice, is a public partnership governed by a steering committee consisting of representatives from member law enforcement agencies.

After 2 years of testing and evaluation, FINDER is ready to be used by Federal agencies and other States as an information-sharing tool for law enforcement. With OLETC assistance, the Office of Research and Commercialization at the University of Central Florida has been studying ways to market the copyright-protected software. Barte says the major options are franchising the product to departments of technology transfer at universities in other States or licensing the product to a Fortune 500 company. Whichever option is chosen, he says, the fees charged to subscribing law enforcement agencies will be quite affordable but enough to sustain the FINDER project and fund further development.

Speaking My Language

It is increasingly common today for law enforcement and corrections agencies to communicate with populations that do not speak English well or at all. A single jurisdiction may be home to a variety of peoples, each of which speaks its own language. How are officers of the law to cope with this difficult situation?

In response, Barte says, a Minnesota company has developed a suite of software and hardware products that translates bi-directionally whatever is said, heard, or

written. With one product, either user speaks into the system and the words are instantly repeated in the other’s language. It also generates a transcript of the conversation. A second product allows the user to take a picture of a sign, menu, or document and receive a translation in seconds. A third product ensures that the other two provide the same reliable translation: Enter new terms and phrases into the database just once to update the entire system. The suite supports European languages, languages of the Far East, various forms of Arabic, and others, Barte says. It is simply a matter of customizing a system to conform to the language needs of a particular community or mission.

Development assistance from OLETC included help with commercialization planning and a technology review by the OLETC Advisory Council. A suite of five products is available now; each can be used independently or in any combination with the others, Barte says. The products can run on a personal computer or through a remote server. A basic unit for interactive translation in the field is the size of a small laptop and costs about \$1,000.

Watering Down Less Lethal

The Trooper Special Intervention System (SIS) was originally designed by an Austrian company to suppress fires, but the Austrian Special Forces found the device useful as a less lethal weapon. As a firefighting tool, the Trooper SIS discharges a 1-liter blast of water with a muzzle velocity of 500 feet per second, producing water droplets between 50 and 100 microns in diameter, which is a steam-like mass without heat. The blast of the atomized water blows the flames from the surface of the fuel while saturating and cooling the combustible material. The unit weighs about 50 pounds and consists of a short, bazooka-like gun and tanks for compressed air and water.

As a less lethal weapon, Barte says, Trooper SIS can stop an individual or a group of individuals at a distance of up to 7 meters, or 23 feet. For crowd-control purposes, he adds, marking dyes (for identifying individuals later) and chemical agents can be added to the water. Trooper SIS can be used to smash through windows or sheetrock walls when safety concerns rule out pyrotechnic distraction and diversion devices.

The device has been licensed from its Austrian inventor by a Louisiana company, which is emphasizing its potential as a tool for law enforcement and corrections. Likely users would include tactical squads and corrections officers. Barte says, however, that extensive research will be required to determine its precise effects on people when the unit is used as a less lethal weapon.

From OLETC, the company received help with market research and the services of the advisory council. Additionally, the unit was tested during a recent OLETC Mock Prison Riot®. Trooper SIS, Barte says, could be available in a year or so. At present, unit cost is undetermined.

For more information about these and other public safety products and technologies receiving commercialization assistance, contact Wayne Barte, 888-306-5382 or wbarte@wvhtf.org. For more information about the commercialization assistance activities offered through the Office of Law Enforcement Technology Commercialization, a program of the Office of Justice Programs' National Institute of Justice and part of the West Virginia High Technology Foundation Consortium, visit www.oletc.org.

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