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Dedicated to Reporting Developments in Technology for Law Enforcement, Corrections and Forensic Sciences

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TechBeat is the quarterly newsmagazine of the National Law Enforcement and Corrections Technology Center System. Our goal is to keep you up to date on technologies for the public safety community and research efforts in government and private industry.

Communications

Technology

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LOOK FOR TO UPLOAD INTERACTIVE FEATURES

TELL US ABOUT YOUR TECHNOLOGY NEEDS

The National Law Enforcement and Corrections Technology Center wants to know your technology needs and requirements as a law enforcement or corrections professional. Use the form at https://www.justnet.org/tech_need_form.html to describe tools that would enhance the safety and effectiveness of your job. This information from practitioners is used to inform the National Institute of Justice (NIJ) research, development, testing and evaluation process and to make recommendations on prioritizing NIJ's investments across its various technology portfolios.



Forensic Technology CoE

Weapons and Protective Systems Technology CoE

MLECTC-National

Corrections Technology Center

Corrections Technology CoE

https://percommonskip.com/percommons/pe

The NLECTC System

The National Law Enforcement and Corrections Technology Center (NLECTC) System is critical to the National Institute of Justice's mission to assist state, local, tribal and federal law enforcement, corrections and other criminal justice agencies address technology needs and challenges.

The NLECTC System is an integrated network of centers and Centers of Excellence that offer free criminal justice technology outreach, demonstration, testing and evaluation assistance to law enforcement, corrections, courts, crime laboratories and other criminal justice agencies.

For information, visit www.justnet.org or contact (800) 248-2742.







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Geospatial Tech

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Android and iPhone apps are now available to access *TechBeat*. Keep current with research and development efforts for public safety technology and enjoy interactive features including video, audio and embedded images.

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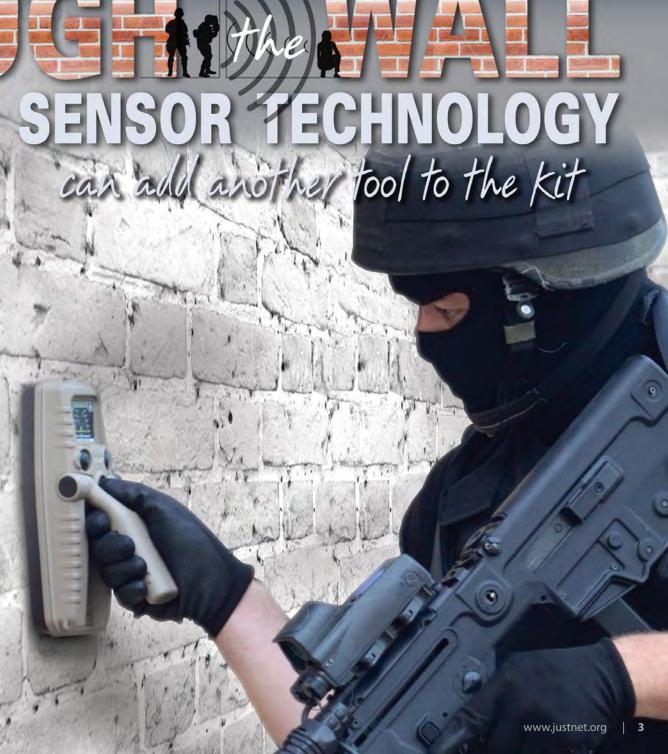
By Becky Lewis

All looks quiet at the suburban residence, no lights in the windows, no car in the driveway. The neighbors haven't seen anyone come or go for several days.

Unknown to the officers outside with the warrants, the house isn't empty. The person they're looking for is inside, hiding in the dark, weapon at the ready, but the officers can't see through the wall to know he's there.

No equipment exists that would give those officers the capability to actually see through the walls, but a devel oping technology known as through-the-wall sensor (TTWS) uses radar to detect even slight motions through building walls, thus providing public safety professionals with increased situational awareness in tactical and rescue situations. The Sensor, Surveillance, and Biometric Technologies Center of Excellence (SSBT CoE) has implemented a number of projects to test and evaluate this technology — some of them complete and others nearly so — to help criminal justice agencies make informed decisions about its purchase and use.

"TTWS certainly can provide useful information, and there are no comparable approaches to getting this type of information," says Lars Ericson, SSBT CoE director. "It's a unique capability, but it is not foolproof. Officers can use the readings to help them make decisions, but they still need to rely on their training and experience to help them decide how to proceed. TTWS is not the end-all and be-all. It's just another tool to help law enforcement in specific situations."



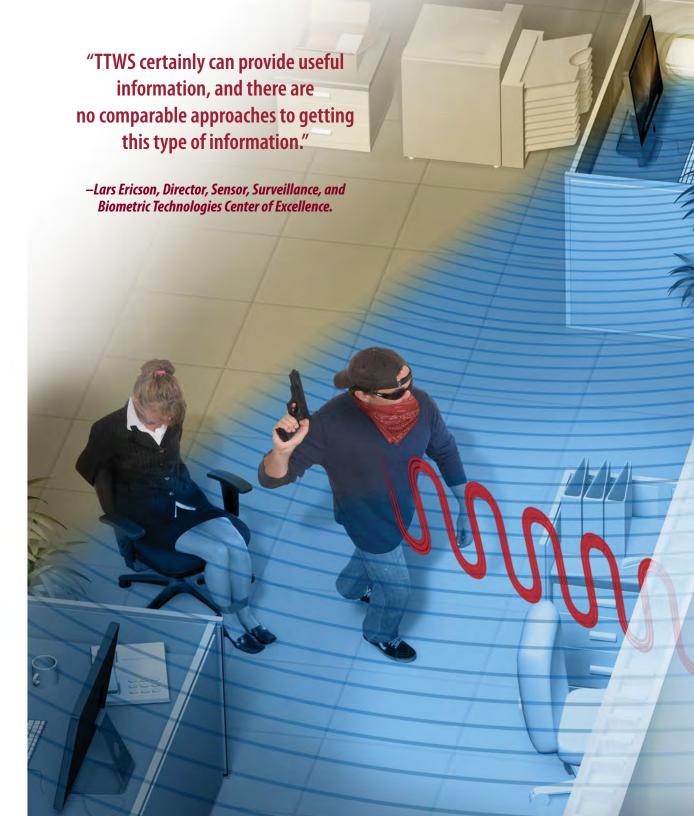
SSBT CoE's multipronged approach to studying TTWS technology stemmed from a high-priority need identified several years previously by the Office of Justice Programs' National Institute of Justice (NIJ) Sensors and Surveillance Technology Working Group (TWG). The first result of that approach, a market survey of available technologies titled *Through-the-Wall Sensors for Law Enforcement: Market Survey*, became available electronically via JUSTNET, the website of the National Law Enforcement and Corrections Technology Center (NLECTC) System, in October 2012 (https://www.justnet.org/pdf/00-WallSensorReport-508.pdf). SSBT CoE plans to produce several other publications on the topic, including an evaluation report and a best practices/lessons learned guide.

"No one had really published a reference for law enforcement agencies that are interested in buying a TTWS device," Ericson says about *Through-the-Wall Sensors for Law Enforcement: Market Survey.* "At this point in time, only a handful of viable commercial systems are available due to their specialized nature. In addition, the survey looked at current government R&D efforts, which also makes it beneficial to federal agencies and vendors that are in the process of developing the technology."

Although the market survey became the first task to reach completion, the major component of the effort has been evaluation of a prototype device developed by AKELA, Inc., with NIJ funding. The first TTWS devices on the market primarily targeted military use; the TWG identified a need for affordable devices that also offer increased portability, leading to the NIJ-funded project.

AKELA delivered the prototype AKELA Standoff Through-Wall Imaging Radar (ASTIR) in mid-2012. SSBT CoE developed a plan to evaluate it that uses capabilities of the three devices that already have received Federal Communications Commission (FCC) certification as a benchmark. (Although vendors are not explicitly prohibited from selling noncertified devices, the FCC restricts the operation of TTWS to only certified devices and only by public safety and law enforcement agencies.)

Evaluation planning began in spring 2012, and approximately a year later, SSBT CoE has nearly completed the task of testing the devices' key variables in a number of extensive scenarios. Throughout the process, the CoE has worked closely with the





U.S. Department of Homeland Security (DHS) SAVER program, which has been performing research on a parallel track that lags the SSBT CoE project by approximately six months.

Our research doesn't duplicate theirs, it complements it," Ericson says. "Ours takes a more scientific/engineering point of view, and theirs is practitioner oriented. They we benefited from the research we put into the market survey and have leveraged our engineers as subject-matter experts to participate in a focus group, where they have demonstrated the technology for practitioners. Its been a good sharing of resources," Ericson says.

In addition to continuing to assist the DHS effort, staff members are wrapping up test ing and data analysis and preparing a report for NIJ review. Publication on JUSTNET is anticipated for late 2013.

SSBT CoE is also preparing a report on TTWS best practices and lessons learned to aid agencies in the use of this technology. Any departments with prior TTWS operational experience are encouraged to contact the center at ssbtcoe@mantech.com or (304) 368-4228 to share their experiences.

For more information on the programs of the Sensor, Surveillance, and Biometric Technologies Center of Excellence, contact NIJ Program Manager Mark Greene at (202) 307-3384 or mark.greene2@usdoj.gov.

How TTWS Technology Works



Through-the-wall sensor technology has something in common with the weather forecasts that are part of daily life: both use Doppler radar to get results.

Using custom-designed antennas, TTWS devices transmit radar at low power and across a wide range of frequencies. The radar passes through walls and then reflects back when it hits an object or an interface between two types of materials. Measurement of the resulting frequency shift enables the technology to distinguish between stationary objects and those that move.

Well-engineered frequencies can detect motion as slight as a person's breathing through thicknesses comparable to 8 to 10 inches of concrete, or one to two walls in a home. The primary limitation is a lack of capability to "see" through solid metal surfaces or walls, no matter the thickness.

COMMUNITY RELATIONS When Officer Matthew Droge of the Riley County Police Department (RCPD) burned a hole in his pants with a road flare while on duty, he let the public know about it

By Michele Coppola

through the department's Twitter site. This friendly, open approach to using social media has helped humanize police and improve relations with the community.

Droge, a professional photographer, joined the department in 2010 as a beat officer on the swing and midnight shifts. He took over social media in 2012 and became the departments public information officer in early 2013. He remains on the bike patrol unit and patrols whenever he is available and dur ing special events.

The Riley County Police Department, with approximately 102 sworn officers, serves a population of about 73,000 and is headquartered in Manhattan, Kan., which is also the home of Kansas State University with its 23,000 students.

A main reason we use Twitter is public relations and to open a line of communication between the community and the police department," Droge says. "Someone can tweet us a question and a police officer will answer them directly. They have direct access, which is the most important part, espe cially since we have a high number of college-age students in the community and that is how they communicate.

It also shows that police officers are human," he adds. "We try to keep humor in our tweets and do question-and-answer sessions that are sometimes not necessarily related to law enforcement and done in a casual way so people can interact with us.

The police department had a Twitter account before Droges arrival, but rarely used it. Since Droge took over social media, the number of followers on the RCPD Twitter account has increased from 50 to more than 4,000. The department also uses Facebook and Pinterest, but currently its main social media vehicle is Twitter.

The department uses Twitter to notify citizens about crime alerts, road closings, accidents, community events and dangerous weather conditions, and to ask for citizens' help in solving crimes. Police can post an unidentified suspects pho to and ask for the publics help in identifying the individual. Droge says citizens' tips have led to solving several cases, the majority of which involve theft.

The department holds regular Twitter question-and-answer sessions for the public, and periodic "Tweet-Alongs," during which everything that happens during a patrol officers shift

is tweeted as it occurs, including the time a fellow officers soda cup broke.

RCPD: The bottom of a soda cup just broke. There is soda everywhere.... Parking tickets smell like CocaCola now.

Everything we do is tweeted, whether it is embarrassing or not. That has helped in community relations, especially with the college crowd," Droge says.

Droge and two colleagues who also tweet for the department, Officer Trevor Wilkey and Sgt. Scott Hagemeister, often use humor and a casual tone in their messages, and it has paid off. The site has attracted followers for its entertainment value as well as for its valuable information, and has resulted in lighthearted exchanges such as the following:

If I declare a donut emergency does that mean you have to deliver donuts to me? I have bacon to trade.

RCPD: Watching our figures... Sorry. And we don't share donuts. Sorry.

Droges enthusiasm for Twitter has earned him the nickname "Twitter Cop" from some of the sites followers.

A few people referred to the person tweeting as the Twitter Cop, which came from the community and which is incredibly positive for us because the community is participat ing," he says.

Although the department uses Twitter to ask for the publics help in solving crimes, it does not encourage users to submit tips through Twitter because of security concerns.

We ask for information through social me dia but tell the public to provide information through calling the department or through Crimestoppers, which has

security protection. We dont want that sensitive

information on a public forum,

Droge says.

"One thing we do which is un conventional for some of our officers

is if I know, for example, that an officer is in a certain area doing radar, we will tweet that an officer is doing radar checks at a particular location," he adds. "It's better that we tweet it rather than someone else. In the end we get the same result of people slowing down. I call that a win. We are out to

He says response from the community to the Twitter site has been largely positive.

make our community a safer place to live.

Every once in a while we get negative feed back, someone complains that tax dollars are

being used to pay people to tweet, but tweeting does not take up much of my day and the benefits are most definitely worth it. He says the key to the successful use of Twit

ter is to simply use it frequently enough to encourage followers, and to keep up with changes as social media evolves.

It offers some level of transparency that we should have and the community appreciates it. Our goal is to interact with and be in the community as much as we can.



The Riley County Police Department has improved community relations through its use of Twitter, encouraging comments and reaction from citizens. Samples of some of the comments follow. I love the RCPD!! They tracked down my

stolen phone!!

To wonderful police force of Manhattan, keep up the good work and thank you for the entertaining tweets!

Huge shout-out to the @RileyCountyPD for helping me get my car unstuck after the snowpocalypse!

Thank you for educating your followers on how to stay safe, out of trouble, & reminding them to keep MHK nice!

For more information, contact Officer Matthew Droge at (785) 537-2112, ext. 3048 or MDroge@ rileycountypolice.org. To view the Riley County Police Department Twitter site, go to https:/twitter.com/RileyCountyPD.

Looking **Answers About Technologies?**

By Becky Lewis

Wondering whether that less-lethal device advertised as "too good to be true" really is? Drop an email to asknlectc@justnet.org or call (800) 248-2742, and ask to be put in touch with the less-lethal subject-matter experts at the Weapons and Protective Systems Technology Center of Excellence (WPSTC).

"If we don't know the answer immediately, we'll do whatever we can to find it," says Ed Hughes, manager of WPSTC's Less-Lethal Technologies program. "We have many resources from which to draw, both technical and operational."

For example, in recent months WPSTC staff members have done characterization testing for both the Los Angeles Sheriff's Department (LASD) and the Pennsylvania State Police. LASD wanted to know more about the Karbon Arms





the field or be useful in decision-making," Hughes says, explaining that depending on the response, he may ask NIJ for permission to conduct testing or he may decide that the request is purely of benefit to the manufacturer and thus out of scope.

When inquiries come from law enforcement agencies, he says they are more along the lines of "Hey, I've got a problem in my department, can you help me solve it?" WPSTC, with its capability to call on many resources within Penn State University in a wide variety of disciplines, combined with its extensive network of criminal justice practitioners, is ready and willing to respond to an even larger volume of inquiries than it currently receives.

To learn more about WPSTC and its programs, visit https://www.justnet.org/our_centers/COEs/weapon-tce. html. To learn more about NIJ's Less-Lethal Technologies program, contact Brian Montgomery at (202) 353-9786 or Brian.Montgomery@usdoj.gov.

TechBeat is Moving...

Online-Only Format

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TechBeat will transition to an online-only format with the Fall 2013 issue.

For 16 years, TechBeat has informed readers on technology developments related to public safety. Through the years, the look of TechBeat has changed, but its purpose has not: to inform law enforcement, corrections and forensic profession als about current and emerging technologies and related programs and services available to them at little or no cost.

Topics have included officer worn cameras, use of social media by law enforcement, planning for active-shooter situations, managing gangs in schools, facial recognition technology, developments in DNA analysis, body armor, and guidelines and standards for technologies.

TechBeat has won awards from the Printing & Graphic Communications Association, National Association of Government Communicators, International Association of Business Communicators, International Academy of Visual Arts, and APEX. We remain committed to producing an award-winning publication as we move forward.

Stay with us to ensure you stay informed with up-to-date, relevant technology news.

Go to **www.justnet.org** and sign up for the online edition.



TECHNology News Summary

ECHshorts is a sampling of the technology projects, programs and initiatives being conducted by the Office of Justice Programs' National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center (NLECTC) System, as well as other agencies. If you would like additional information concerning any of the following TECHshorts, please refer to the specific point-of-contact information that is included at the end of each entry.

In addition to TECHshorts, JUSTNETNews, an online, weekly technology news summary containing articles relating to technology developments in public safety that have appeared in newspapers, newsmagazines and trade and professional journals, is available through the NLECTC System's website, www.justnet.org. Subscribers to JUSTNETNews receive the news summary directly via email. To subscribe to JUSTNETNews, go to https://www.justnet.org/subscribe.html, or email your request to asknlectc@justnet.org or call (800) 248-2742.

Note: The mentioning of specific manufacturers or products in TECHshorts does not constitute the endorsement of the U.S. Department of Justice, NIJ or the NLECTC System.

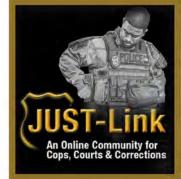
JUST-Link Gives a Voice to Cops, Courts and Corrections Officers

NLECTC-National

The National Law Enforcement and Corrections Technology Center (NLECTC) System recently launched JUST-Link, an online community for cops, courts and corrections. This secure forum is invitation-only,

moderated by NLECTC, and designed to share ideas, technologies and solutions.

Those eligible to apply for a JUST-Link account are any federal, state or local unit of government, or an Indian tribe or special district (e.g. airports, schools) authorized by law or by a government agency to engage in, or supervise, the prevention, detection, investigation or adjudication of any violation of criminal law, or authorized by law to supervise criminal offenders. Apply by submitting a request on agency letterhead to justlink@justnet.org. Include a designated point-of-contact/POC (name, rank/title, mailing address and phone/fax/email) who is eligible to post information on JUST-Link on the agency's behalf. Once the information is verified, the POC will receive a password to participate in the forum.



Submit questions to justlink@justnet.org.

Suspicious Powder Incidents Require the Right Tools for Ouick Action

U.S. Department of Homeland Security

First responders know that "white powder scenarios"

(i.e., suspected biological threats), require quick and decisive action. Having the right field-deployable equipment available to determine the nature of the suspicious substance can be complicated, challenging and expensive.

Recently, the U.S. Department of Homeland Security's Science and Technology Directorate and the U.S. Department of Energy's Pacific Northwest National Laboratory (PNNL) issued a report summarizing an extensive list of commercially available, hand-portable biodetection technologies. *Biodetection Technologies for First Responders* helps end-users such as firefighters, police officers and hazmat workers make informed decisions about procuring the right technology for their particular need and circumstance.

"The report serves as a product buying guide for end-users as well as procurement specialists," says Cindy Bruckner-Lea, PNNL project manager. "It provides specifics and details on dozens of commercially available technologies. This free report will be an important and useful resource for first response teams everywhere."

PNNL is in the process of conducting laboratory testing of biodetection assay and instrument performance for both anthrax and ricin bio-threats, and is investigating the impact of commonly encountered "hoax" white powders. PNNL also plans to facilitate performance and ergonomic testing of the most promising technologies by first responders.

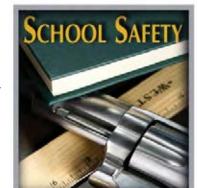
Download the report from http://www. pnnl.gov/nationalsecurity/technical/chemical biological/Biodetec-

tion_Technologies_for_ First_Responders.pdf.

School Safety Project Launched

National Institute of Justice/ NLECTC-National

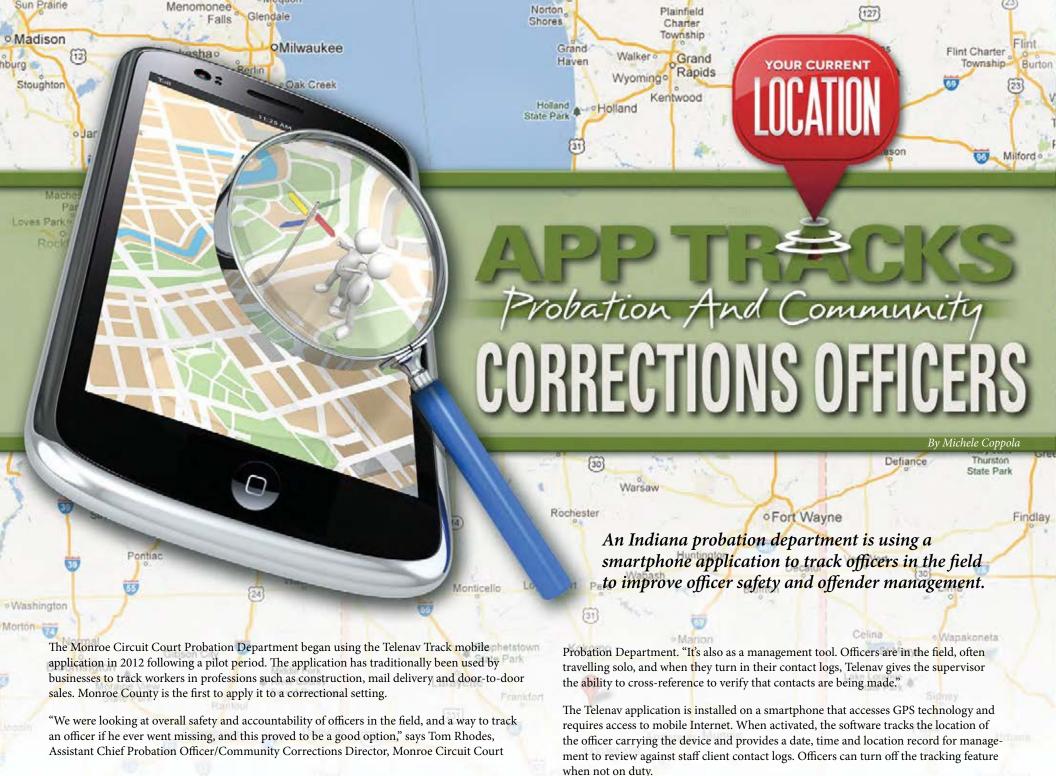
In 2013, a new light is being focused on the issue of school safety as the president, Congress and

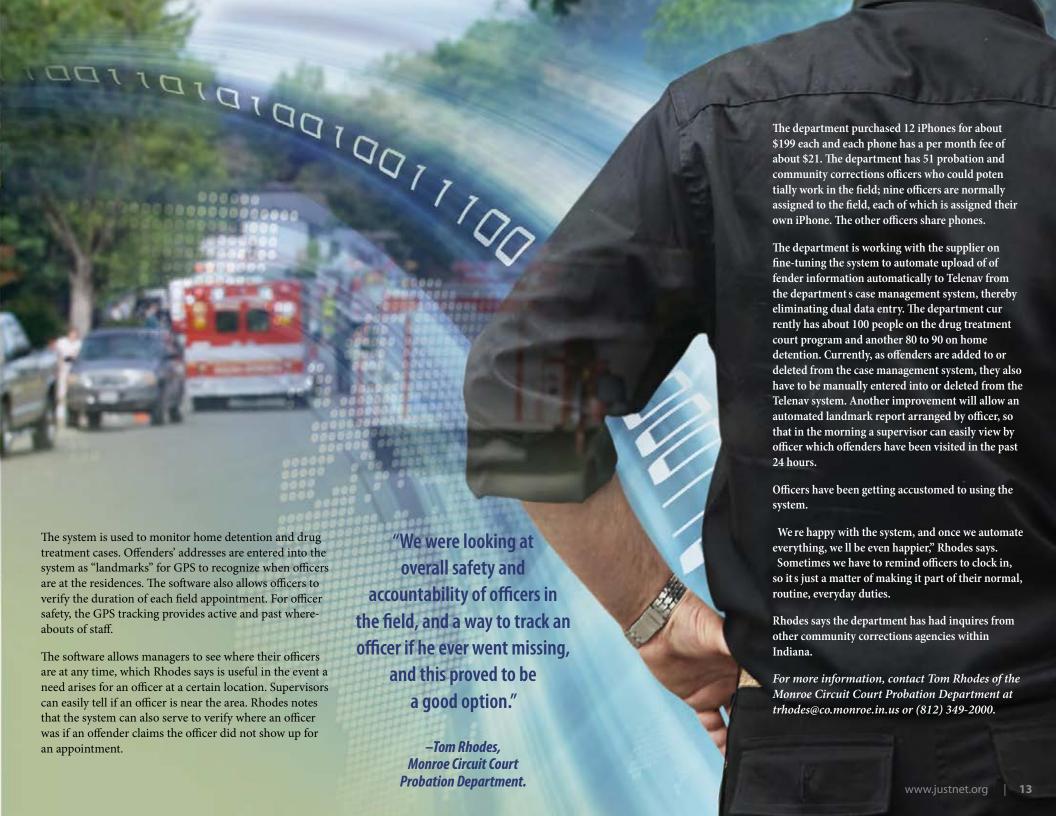


other elected officials seek new and innovative ways to keep children and adults safe in school settings. Communities have also come together to seek new solutions in the wake of the December 2012 mass shootings in Newtown, Conn. In April, the National Institute of Justice (NIJ) began working with a group of trainers and criminal justice practitioners who are subject-matter experts in the area of school safety to create and expand SchoolSafetyInfo.org. This portal site, supported by the National Law Enforcement and Corrections Technology Center (NLECTC)-National, includes links to breaking news and success stories focusing on proven strategies. It also provides access to numerous publications, federal agencies, nonprofit associations and commercial resources that target professionals in the fields of criminal justice and education, as well as those that meet the needs of parents and communities. NIJ and NLECTC-National are in the process of developing related apps for tablets and smartphones.

Criminal justice professionals are encouraged to visit this site often, as updates occur frequently. To suggest an additional

resource link or a topic for a success story, send an email to asknlectc@ justnet.org. For more information on NIJ efforts related to school safety, contact Michael O'Shea, Law Enforcement Program Manager, at (202) 305-7954 or michael.oshea@ usdoj.gov.





FFENDER TRACKING SYSTEM STANDARD COMPLETION

By Becky Lewis

Offender tracking system (OTS) technology has emerged as an important tool to assist an agency in the effective management of selected participants in the community. The technology has been applied in many ways, including tracking of sex offenders, close monitoring of higher risk offenders, and as a confinement alternative for low-risk offenders. OTS technology is a powerful tool; however, like all technologies it has inherent capabilities and limitations that must be understood and managed. This can be difficult because the tracking systems are essentially composed of a number of complex technologies working together. Additionally, integrating the technology into an effective supervision program can be challenging.

To address the concerns expressed above, the Office of Justice Programs' National Institute of Justice (NIJ) launched a Special Technical Committee (STC) in October 2009 to create a standard, certification program document and a users guide (Selection and Application Guide, or SAG) related to the tracking systems. Based on a high-priority need identified by the NIJ Community Corrections Technology Working Group, the project brought together a carefully vetted group of practitioners and technical experts; NIJ and the Corrections Technology Center of Excellence (CoE) provide management support. The CoE is part of NIJs National Law Enforcement and Corrections Technology Center (NLECTC) System.

Currently, no performance-based testing and certification program exists for OTS technology. Agencies must rely primarily on the manufacturer to fully explain equipment, and they are often not given complete information because of an inherent conflict in describing limitations.



The field requires an objective resource that has established the limitations and specific operating capability of the tracking systems.

Because no performance-based testing and certification program currently exists, the field has no available qualified resource to make decisions on acquiring OTS technology, says NIJ Corrections Technology Program Manager Jack Harne.

NIJ tasked the STC with developing an objective standard for OTS devices with requirements that can be accurately measured through a testing program, and documenting how to establish a conformity assessment program for monitoring compliance with the standard. The SAG

provides necessary information for practitioners using these devices in the field.

After three years of independent and small-group work behind the scenes, and 18 face-to-face STC working meet ings, the group has completed the following draft documents: Criminal Justice Offender Tracking System Standard (NIJ Standard-1004.00), Criminal Justice Offender Tracking System Certification Program Requirements (NIJ CR 1004.00) and Selection and Application Guide to Offender Tracking Systems for Criminal Justice Professionals (NIJ Guide 1004.00).

In the near future, these documents will go through NIJs administrative review and publication process; once they have been published and a testing program begins, certified

tracking systems will be available approximately 18 months later.

This standard specifies the minimum performance requirements and defines the methods for testing OTSs. The goal is to provide criminal justice person nel with the information they need to make better procurement decisions," says Joe Russo, Corrections Technology CoE director. "The entire process is de signed to provide the end users with a greater degree of confidence that the systems they procure will work as intended.

The standard addresses both one-piece and two-piece devices, with some distinct test methods and require ments for each, and includes requirements related to form and fit as well as performance. The detailed information on labeling, as well as definitions and reference materials, may also prove valuable to criminal justice agencies.

The conformity assessment documentation addresses accreditation requirements for certification bodies to help ensure consistent application of the standard, es tablish uniformity in the certification body accreditation process, and provide transparent criteria for the operation of certification programs and accreditation of product certification bodies. The SAG provides guidance concerning the functionality, procurement, selection, use and maintenance of tracking systems; its primary audience includes criminal justice of ficials, departmental or governmental technology managers, and system purchasers.

NIJ anticipates that the documents will be released during 2014. On their release, they will be avail able for download from JUSTNET, the website of the NLECTC System. Promotional efforts through Facebook, Twitter and *JUSTNET News* will announce their availability.

For more information on NIJs developing Offender Tracking Systems standard, contact Corrections Technology Program Manager Jack Harne at (202) 616-2911 or jack.harne@usdoj.gov.

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JUSTNETNews. Includes article abstracts on law enforcement, corrections and forensics technologies that have appeared in major newspapers, magazines and periodicals and on national and international wire services and websites.

Testing Results. Up-to date listing of public safety equipment evaluated through NIJ's testing program. Includes ballistic- and stab-resistant armor, patrol vehicles and tires, protective gloves and more.

Calendar of Events. Lists upcoming meetings, seminars and training.

Social Media. Access our Facebook, Twitter and YouTube feeds for the latest news and updates.

Do More With Less. Highlights creative programs and resources to help agencies meet challenges as budgets shrink and demands on departments grow.

Tech Topics. Browse for information on specific topics such as biometrics, cybercrime, forensics and corrections.





The National Law Enforcement and Corrections Technology Center is supported by Cooperative Agreement #2010-MU-MU-K020 awarded by the U.S. Department of Justice, National Institute 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 Lockheed Martin. 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; the Bureau of Justice Statistics; the Office for Victims of Crime; the Office of Juvenile Justice and Delinquency Prevention; and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking.