TechBeat

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by JTIC

Table Of Contents

About TechBeat

TechBeat is the monthly 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.

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The NLECTC System
The Justice Technology Information Center (JTIC), a component of the National Institute of Justice's National Law Enforcement and Corrections Technology Center (NLECTC) System, serves as an information resource for technology and equipment related to law enforcement, corrections and courts and as a primary point of contact for administration of a voluntary equipment standards and testing program for public safety equipment.

JTIC is part of the NLECTC System, which includes the Justice Innovation Center for Small, Rural, Tribal, and Border Criminal Justice Agencies, which focuses on the unique law enforcement challenges faced by those types of agencies; the National Criminal Justice Technology Research, Test and Evaluation Center, which provides technology-related research and testing and operational evaluations of technologies; and the Forensic Technology Center of Excellence, which supports technology research, development, testing and evaluation efforts in forensic science. In addition, a Priority Criminal Justice Needs Initiative exists to assess and prioritize technology needs across the criminal justice community.

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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.

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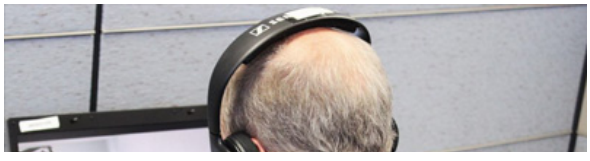
Virtual Training Tool Allows First Responders to Train Across Jurisdictions and Disciplines

Virtual Training Tool Allows First Responders to Train Across Jurisdictions and Disciplines

A free virtual training tool is available that allows first responders from different disciplines to train together for critical incidents using game-based software.

The Enhanced Dynamic Geo-Social Environment (EDGE) tool was funded by the U.S. Department of Homeland Security Science and Technology Directorate (DHS S&T) and the U.S. Army Research Laboratory, and developed with input from first responders. Officially launched in June 2017, it allows users to assume discipline-based avatars and role-play complex response scenarios. Users need internet capability and a desktop or laptop computer with a dedicated video card.



The first scenario developed involves an active-shooter incident at a 26-story hotel, with equipment and vehicles,but users can create

whatever scenario they want in the hotel environment, with public areas, elevators and rooms rendered in realistic detail. A single agency can train its staff, or multiple law enforcement, fire and emergency medical service agencies across jurisdictions can use the tool to train together. The scenario includes dispatch, fire, and law enforcement communication channels.

Milt Nenneman, the DHS S&T First Responder Group program manager for the project, participated in a Tech Talk about EDGE held in August 2017.

“Basically it’s about cross-discipline training with a lot of collaboration, communication, unified command and a certain amount of team skills,” Nenneman says. “We don’t want to tell local responders how to respond to an event. This was intentionally developed with agnostic tactics; it is for agencies to develop plans and policies on how to respond to incidents.

“It’s important that this provides agencies like fire and law enforcement an opportunity to train together. Very seldom do they have the opportunity to train together in real-life, and it is hard to get those agencies time away from their regular duties.”

Responders manipulate their avatars as they would in a real emergency according to their agency policies. EDGE has a training component so users can get familiar with the system.

Agencies can access EDGE software either on the Web or choose to install the program locally on their own local area network. Requests for access are vetted by DHS. Several hundred EDGE accounts have been opened since it became available.

“An event can be replayed for after-action review. This is a virtual training tool to be used to reinforce training needs, but it needs to be accompanied by some type of course instruction,” Nenneman says. “The program allows someone to act as instructor to monitor the training activity so they can intervene at a teachable moment. You can see if someone did something correct and reinforce it, or if there was a negative outcome you can go back and review events that led up to that.”

The impetus for developing EDGE came from first responders, who identified virtual training

as a capability gap.

“From the beginning we were very clear and adamant about involving the first responders, and as we developed something we would go back and ask them will this meet your training needs, because at the end of the day we want to ensure that we are meeting the training needs of the first responder community,” Nenneman says.

A second EDGE environment in a school is being developed. It will provide first responders with the opportunity to train for active-shooter situations in schools repeatedly without disrupting students. Teachers and school administrators would be able to train with first responders so that everyone knows what to do and how to work together.

“Sometimes people are reluctant to run down hallways doing active-shooter drills in schools, and schools don’t want to traumatize kids,” Nenneman says. “You want to be prepared for those eventualities, but at the same time, you don’t want to negatively impact the student body. In a virtual training environment you can train repetitively.”

To learn more and request access to EDGE, go to www.cesiedgetraining.com. Agencies can also call (877) 334-3011 to reach the EDGE help desk. Also visit https://www.dhs.gov/science-and-technology/enhanced-dynamic-geo-social-environment-edge for more information.

Article photo: U.S. Department of Homeland Security, Science and Technology Directorate

Main photo: U.S. Department of Homeland Security, Science and Technology Directorate

Inmate Use of Computer Tablets in Pima County

Inmate Use of Computer Tablets in Pima County

Allowing inmates to use tablet computers in the Pima County, Ariz., correctional facility has helped improve safety for both inmates and staff while providing access to life skills training and contact with family, according to the Pima County Sheriff's Department.

The Pima County Adult Detention Center in Tucson houses between 1,800 and 2,000 inmates at any given time. The sheriff's department had a six-month pilot tablet program that began in December 2015, after which tablets were given to every inmate.

"The pilot program was to test the durability and security of the tablets and the WiFi. We told inmates to try and breach the security and they couldn't do it," says Capt. Sean Stewart of the sheriff's department. "The tablets were considered secure and durable so we distributed them to all inmates."

A tablet is taken away for a period of time if an inmate is troublesome, which gives them impetus to behave, according to Stewart.

"The tablets have helped create a safe and secure environment. The tablets are valuable to inmates and they don't want to lose them. It keeps them occupied and entertained. The tablets serve as an inmate management tool and it gives them something to occupy their minds," Stewart says. "Prior to tablets, if officers confronted an inmate about negative behavior, the inmate would often be belligerent and hostile. Now that officers have the ability to take a tablet away, they are getting a different reaction from inmates. The inmates are being apologetic, contrite, instead of being belligerent."

Suicides, inmate-on-inmate fights and inmate altercations with correctional staff have all declined by at least 50 percent since tablet use was instituted, and the overall jail environment has improved. The sheriff's department compared statistics during a 12-month period prior to distributing tablets with the 12-month period after tablets were distributed.

"You just walk about the jail and you don't feel that tension; it's palpable," Stewart says.

There is no internet access and no social media through the tablets. Through a secure intranet, access is provided to anger management programs and employment training. For a monthly fee, users can stream music. They can exchange emails (roughly 2,000 characters for 25 cents) and call family (20 cents a minute) via a secure, monitored server. Every email message and phone call is monitored. Family members cannot directly call an inmate; they can call and leave a short message asking an inmate to call them at a certain day and time. Providing each inmate with a tablet means they do not have to compete for use of limited wall phones, reducing tension.

Not all tablet usage requires a fee. For example, users have free access to an electronic law library and to hundreds of free e-books. Inmates can use the tablets to request medical care and notarization of paperwork for court.

The vendor provided the tablets free to the department and installed servers and WiFi, and in exchange could keep all revenue generated from tablet use for the first year. After the first year was up, revenue is now shared with Pima County. Revenue that come back to Pima County go toward inmate welfare fund to benefits inmates while incarcerated.

For more information, contact Capt. Sean Stewart at sean.stewart@sheriff.pima.gov.

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FTCoE Opioid Webinar Series Shares Knowledge, Promotes Collaboration

FTCoE Opioid Webinar Series Shares Knowledge, Promotes Collaboration

What do a veterinarian, a former district attorney and a nationally known author all have in common? They've all been guest presenters in the National Institute of Justice's (NIJ) Forensic Technology Center of Excellence (FTCoE) webinar series on combatting the opioid epidemic in the United States.

NIJ's FTCoE, which is part of the National Law Enforcement and Corrections Technology Center System, launched the series in July and has a total of 15 episodes planned through the end of 2017. Through early October, the first six webinars had drawn a total of nearly 1,600 participants. Archival versions of the events can be found on the FTCoE website for those who missed the live presentations or who just want to go back and hear the information a second time. Archival presentations are posted within 48 hours of the live events, which have drawn up to nearly 600 registrants.

One webinar featured Sam Quinones, author of *Dreamland: The True Tale of America's Opiate Epidemic,* who discussed the research that went into creating his award-winning

nonfiction bestseller. In addition to Quinones, a veterinarian who talked about the importance of canine (K9) officers carrying appropriate doses of naloxone for their dogs, and a former district attorney speaking on legal aspects of the epidemic, presenters have included a number of toxicologists and research professionals talking about the more technical aspects of dealing with the epidemic.

"We didn't want to focus on one specific area, and we've pulled in quite a few subject-matter experts from various disciplines," says the FTCoE's Josh Vickers. "We wanted to be sure we hit on all the angles of dealing with the epidemic."

The webinars last approximately one hour, with a 45-minute presentation and a planned 15-minute question-and-answer session. Vickers says the Q&As have helped draw out valuable information such as how to get funding for the canine naloxone, and each
webinar also includes information on how to contact the speaker for more information. No matter what the topic, results from post-webinar surveys have been overwhelmingly positive.

The idea to create a webinar series focusing on varied topics came from FTCoE Director Jeri Ropero-Miller along with NIJ forensic staff, who says she found that over the past several years, conferences and summits on the opioid epidemic tended to have a very narrow, often state-centric focus.

"They would focus on a certain component like treatment and rehabilitation or safety issues with first responders," Ropero-Miller says. "There were only a few where different stakeholders came together to give a broader perspective and to talk about ways the people could interact to figure out better solutions."

As with every emerging hot topic, the FTCoE looked for the best way to transfer knowledge about opioids, and with the need to bring various disciplines together, a webinar series with a wide range of presenters seemed like the best channel, she says.

"We not only brought in forensic practitioners, we brought in first responders, behavioral psychologists, social scientists and others," she says. And although the center usually tries to stay with technical experts in various disciplines, scoring the interview with Quinones was a bonus that brought added popularity to the series.

"I was trying to get him to speak at a conference where I was on the planning committee, and that didn't work out. However, I saw on his website that he would do Skype interviews for book clubs if they could guarantee at least 30 participants. I did a cold call and said I could deliver way more than 30 audience members, and he said he would do it. He's not the type to do slides and a formal presentation; it really was just him sharing his story with us via webcam and it went really well," she says.

All of the webinars have drawn a wide-ranging audience that includes forensic professionals, law enforcement officers and others.

"It's a topic where there is a critical need for people to step across the lines so that everyone knows the different steps involved in responding to the epidemic and how we can all work together to be more proactive. There's a need to understand what the different components are, what the challenges are and how we can collaborate to meet those challenges," she says.

To access the webinar archives, sign up for future events or learn more about the series, visit https://forensiccoe.org/webinar/opioid-crisis-a-public-health-enemy-webinar-series/.

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Law Enforcement Encounters With Suspicious UAS Operations

Law Enforcement Encounters With Suspicious UAS Operations

As use of unmanned aircraft systems (UAS), also referred to as drones or unmanned aerial vehicles, gains popularity in the U.S., law enforcement agencies need to know how to assess UAS operations and options for dealing with suspected illegal actions.

The Federal Aviation Administration (FAA) is responsible for enforcing its regulations applicable to UAS, but the agency notes that state and local law enforcement officers are often the first to discover unauthorized or unsafe UAS operations and often are in the best position to immediately intervene, possibly through their already existing authorities.

A challenge for law enforcement officers is how to distinguish between lawful, authorized use of UAS and under what authority to intervene when encountering suspected unauthorized or dangerous UAS operation.

A number of states and local governments have passed laws directly related to UAS. According to the National Conference of State Legislatures (NCSL), as of July 2017, 40

states had enacted laws addressing UAS issues, and an additional three states have adopted resolutions. Common issues addressed in the state legislation include defining what a UAS, UAV or drone is; how they can be used by law enforcement or other state agencies; how they can be used by the general public; and regulations for their use in hunting game, according to NCSL. State and local jurisdictions considering adopting UAS-specific laws should consult with the FAA about the intersection of federal, state and local regulation of aviation, generally, and UAS operations, specifically.

Law Enforcement Response

Local law enforcement cannot enforce FAA regulations, but law enforcement can possibly use a number of existing state and local laws to help address suspected illegal or improper UAS operations, depending on the situation. For example, reckless endangerment, criminal mischief, voyeurism, inciting violence, trespassing, obstruction of police emergency services duties, and nuisance/noise laws might apply. (See sidebar, Laws Used to Deal With Suspicious UAS Operations). Law enforcement should take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules.

The FAA has civil enforcement authority, and has responsibility for enforcing its own regulations. The FAA may take enforcement action against anyone who conducts unauthorized UAS operations or flies in a way that endangers the safety of the National Airspace System. The agency's enforcement tools include warning notices, letters of correction, certificate actions and civil penalties. The Department of Transportation Office of Inspector General may, in some instances, pursue criminal penalties against illegal drone operations.

The FAA wants to enlist the assistance of local law enforcement. To assist the FAA in gathering information about suspected unauthorized UAS activities, law enforcement can provide invaluable assistance by:

- Identifying and interviewing potential witnesses.
- Identifying the UAS operator.
- Viewing and recording the location of the event for follow-up FAA investigation.
- Identifying sensitive locations, events or activities subject to temporary flight restrictions or other prohibitions on flight operations.
- Notifying one of the FAA Regional Operation Centers of the incident as soon as possible when the event poses an imminent danger to other aircraft or has resulted in accident/injury.
- Collecting and preserving evidence the FAA can use in its investigation.

FAA Regulations

Small UAS

In summer 2016, the FAA issued regulations, (known as Part 107), that apply to small UAS, including commercial operations. (This rule may also be used by hobbyists if they choose.) The basic operating requirements include:

- Pilot must have a remote pilot airman certificate.
- UAS must weigh less than 55 pounds, travel less than 100 mph and fly no higher than 400 feet above the ground.*
- UAS must be operated within visual line of sight of the remote pilot or a designated observer.*
- UAS cannot operate directly over people who are not involved in the UAS operation.*
- UAS must fly during the day.*
- The weather must be at least three miles visibility.
- Air Traffic Control authorization is needed prior to operations within certain airspace.
- No careless or reckless operations.

*Operators can request a waiver from certain regulatory requirements.

UAS must be registered with the FAA and display the registration number. See https://www.faa.gov/uas/getting_started/fly_for_work_business/.

Recreational or Hobby UAS

There are two options for recreation or hobby UAS fliers to operate in the National Airspace

System:

Option #1. Fly in accordance with the Special Rule for Model Aircraft (Public Law 112-95 Section 336). Under this rule, operators must:

- Fly for hobby or recreational purposes only.
- Follow a community-based set of safety guidelines.
- Fly the UAS within visual line-of-sight.
- Give way to manned aircraft.
- Provide prior notification to the airport and air traffic control tower, if one is present, when flying within five miles of an airport.
- Fly UAS that weigh no more than 55 lbs. unless otherwise certified by a community-based organization.

Safety guidelines (best practices):

- Fly at or below 400 feet.
- Keep UAS within sight.
- Never fly near other aircraft, especially near airports.
- Never fly over groups of people.
- Never fly over stadiums or sports events.
- Never fly near emergency response efforts such as fires.
- Never fly under the influence.
- Be aware of airspace requirements.

Note: In May 2017, the U.S. Court of Appeals for the District of Columbia Circuit ruled that an FAA regulation, which required owners of model aircraft operated pursuant to Public Law 112-95 Section 336 to register their model aircraft with the FAA, does not apply to those specific aircraft. Consequently, model aircraft will not have a registration to show if they are only being flown for recreational purposes.

Option 2: Fly in accordance with the FAA Small UAS rule (Part 107), which requires operators to:

- Obtain a remote pilot certificate or be under the direct supervision or a person who holds a certificate.
- Register the aircraft as a non-modeler.
- Follow the operating rules in accordance with the Part 107 regulation.

See http://www.faa.gov/uas/getting_started/fly_for_fun/ and https://www.faa.gov/uas/faqs/#ffr.

For more detailed discussion and guidance, see the FAA's *Law Enforcement Guidance for Suspected Unauthorized UAS Operations,* August 2016, at https://www.faa.gov/uas/resources/law_enforcement/media/FAA_UAS-PO_LEA_Guidance.pdf and www.faa.gov/uas/resources/law_enforcement/ for general information.

A basic law enforcement response quick reference card from the FAA is available at https://www.faa.gov/uas/resources/law_enforcement/media/FAA-UAS-DRONE-LE-ReferenceCard.pdf.

To help educate the public, the FAA developed a smartphone app called B4UFLY, which helps unmanned aircraft operators determine whether there are any restrictions or requirements in effect at the location where they want to fly. For download instructions, go to https://www.faa.gov/uas/where_to_fly/b4ufly/.

Laws Used to Deal With Suspicious UAS Operation

In some states, law enforcement actions can be taken under the state's transportation regulations concerning the unsafe operation of an aircraft. In general, state and local laws can help address suspected illegal or improper UAS operations, depending on the circumstances. For example:

- In Seattle, a jury found a man guilty of reckless endangerment stemming from a 2015 incident in which a woman was knocked unconscious when she was struck by a small drone during the Pride Parade in downtown Seattle. (http://www.seattletimes.com/seattle-news/crime/pilot-of-drone-that-struck-woman-at-pride-parade-sentenced-to-30-days-in-jail/)
- In January 2017, in Pacifica, Calif., police cited a man for flying a UAS close to a California Highway Patrol helicopter during a rescue mission. Police located the drone pilot and cited him on a misdemeanor charge of suspicion of impeding first responders at the scene of an emergency. (http://www.latimes.com/local/lanow/la-me-ln-pacifica-drone-rescue-20170130-story.html)
- In 2016, the operator who lost control of his UAS near the University of Kentucky Stadium was charged with wanton endangerment and criminal trespassing. The wanton endangerment charge was dismissed as part of a plea agreement. He pled guilty to criminal trespassing and

paid a $100 fine. (http://www.kentucky.com/news/local/counties/fayette-county/article53915475.html).

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Study of Tracking Tool Used During Police Pursuits

Study of Tracking Tool Used During Police Pursuits

National Institute of Justice

An article and report on a study of the use of the remote vehicle tracking system StarChase are available from the National Institute of Justice (NIJ).

StarChase is a GPS-based system that provides a capability for tracking a fleeing vehicle at a distance by launching and attaching a GPS-tracking tag to a fleeing vehicle and providing real-time data on the vehicle's location. The National Criminal Justice Technology Research, Test and Evaluation Center conducted studies at three law enforcement agencies that use the technology. The center is funded by NIJ and hosted by the Johns Hopkins Applied Physics Laboratory.

The study identifies general findings on tracking technologies and StarChase-specific findings.

General Findings:

1. GPS-enabled pursuit technologies such as StarChase extend police flexibility by providing remote tracking capability when line-of-sight vehicle tracking becomes unfeasible.
2. Success or failure of a pursuit technology such as StarChase is related to the integration of the new technology into existing pursuit policies and practices.
3. A technology/system "champion" who advocates for its use aids in the successful adoption and integration of a new pursuit technology.
4. Law enforcement agencies that do not have a process in place for deploying and evaluating new technologies may lack the data required to comprehensively assess a technologies' impact and effectiveness.
5. Law enforcement agencies engaged in new technology deployment and evaluation would benefit from an end-to-end assessment process that includes the collection of comparable baseline data.

StarChase-Specific Findings:

1. Implementation and use of StarChase varied among the end-user agencies. In some cases, use was consistent with the stated purpose of the system (e.g., tagging a vehicle during or prior to a pursuit and tracking the vehicle from a distance). In some cases, the agencies deployed the system with a different intended use or Concept of Operations (CONOPS).
2. In two of the three case studies presented, the data suggests that the use of StarChase, when properly deployed, had a positive impact on the pursuit outcome for apprehensions. In the other case study, apprehensions remained high whether the system was properly or improperly deployed.
3. End users' opinion of StarChase is that it is a helpful pursuit management tool, but that it is not a comprehensive solution for avoiding or successfully resolving all possible pursuit scenarios.

For more information, read the article about the report here and access the report here.

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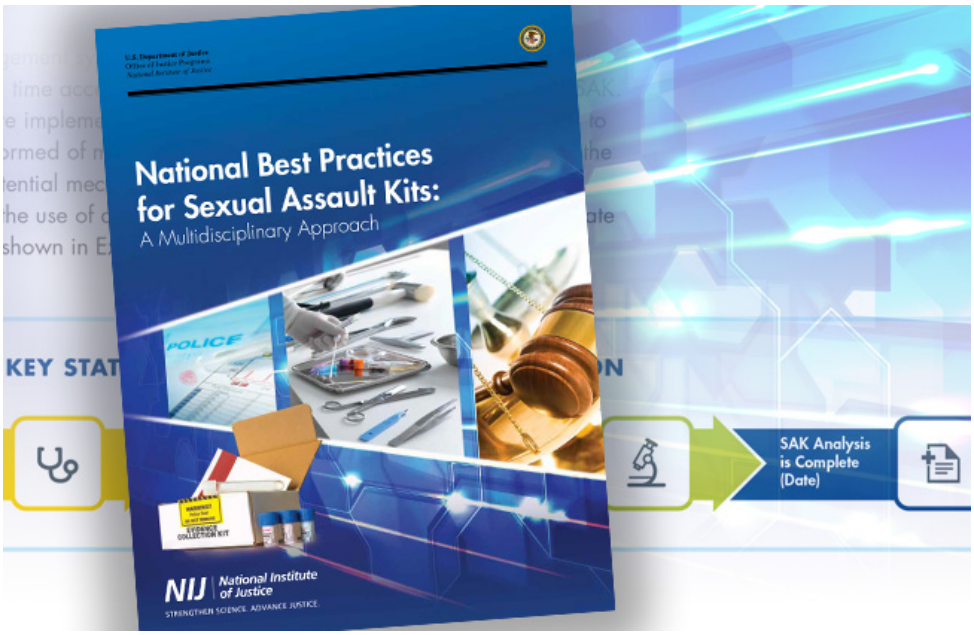

Report: Best Practices for Sexual Assault Kits

Report: Best Practices for Sexual Assault Kits

National Institute of Justice

A report is available that identifies best practices to assist jurisdictions and organizations in the development of protocols to address issues that arise in the course of working with sexual assault evidence.

National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach, recommends best practices to improve the response to sexual assault from initial victim disclosure through laboratory testing. The National Institute of Justice report lists 35 recommendations that can provide a roadmap for a victim-centered approach that considers the best available practices for collecting, transferring, preserving, storing, and analyzing sexual assault kits.

The recommendations apply to medical professionals, law enforcement, victim advocates, prosecutors and laboratories. A working group was formed and created the report in response

to the Sexual Assault Forensic Evidence Reporting (SAFER) Act of 2013, which recommends the development of best practices and protocols for the collection and processing of DNA evidence in sexual assault cases.

To read the report, click here.

Main photo: National Institute of Justice