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R-TECH NEWSLETTER

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This Newsletter discusses technologies of interest to first responders that have received funding, in part, from the Federal government. Mention of these technologies should not be construed as an endorsement of either the technology, or the entity producing it, by the Federal government.

To download a copy of this newsletter, visit:
<http://www.firstresponder.gov/Pages/NewsLetterPage.aspx?NewsLetter=current>

FREE FOR THE ASKING

First Responders Have Access to Free Surplus Equipment

First responders benefit from having the latest technology in the field. However, the pressure to meet the expectations of their communities must be balanced by budget limitations. To combat this problem, many first responders look for alternative methods of acquiring the equipment they need. The Defense Reutilization and Marketing Service (DRMS) of the Department of Defense (DoD) Defense Logistics Agency (DLA) may offer one solution: surplus military property, made available for state and local use at no cost.

When a branch of the military has a surplus of equipment, it will first attempt to redistribute the surplus within its own service. If no other units need the items, the agency will transfer them to DRMS where the property is placed in a database and viewable by registered users. DoD agencies have first priority, followed by other federal agencies. If these agencies do not requisition the property, it is made available for donation to state surplus property agencies and other qualified organizations. Property that is not reused, transferred, or donated is sold to the public as surplus.

The inventory changes daily and is not restricted to military-specific equipment. It may contain such items as air conditioners, clothing, vehicles, exercise equipment, communications equipment, and computers. The equipment is offered in "as is" condition and the acquiring agency is responsible for arranging and paying for shipping.



Photo courtesy of Eastern Kentucky University Justice & Safety Center

DRMS manages two discipline-specific programs: the 1033 Program for Law Enforcement and the Firefighter Program. These programs allow certain agencies to acquire specific types of equipment that are unavailable to most participants, giving priority to counter-terrorism agencies. Authorized by Section 1033 of the National



Photo courtesy of Eastern Kentucky University Justice & Safety Center

Defense Act of Fiscal Year 1996, state and local law enforcement agencies can acquire surplus DoD vehicles (land, sea, and air), weapons, computer equipment, body armor, fingerprint equipment, radios, televisions, photographic equipment, and other items. Federal, state, and local law enforcement agencies that have arrest and apprehension authority, including more than 200 tribal police departments, are eligible for this program and can enroll through their governor-appointed state coordinator. A complete listing of state coordinators can be found online at https://pubweb.drms.dla.mil/cm/Section1033/STATE_COOR.htm.

The Firefighter Program is the result of an interagency agreement between the U.S. Forest Service and DoD. Under this program, the Forest Service receives excess DoD firefighting equipment, including pumpers and brush trucks, and loans it to state agencies for wildland and rural firefighting. Agencies interested in participating in the program should contact their state's forest service. A complete listing can be found online at www.fs.fed.us/fire/partners/fepp. DRMS property suitable for other responder groups can be obtained through each state's agency for surplus property.

For more information on DRMS and the surplus equipment programs, visit the program's Website at www.drms.dla.mil.

TRICKING THE BRAIN

Gel Substance Transforms Noxious Odors into Pleasant Scent

Noxious odors are an unfortunate part of the job for first responders who must contend with decaying or burning flesh, body fluids, and other unpleasant circumstances. Such odors are not only unpleasant, they can harm both productivity and health. To mask the smell of noxious odors, many first responders use over-the-counter petroleum-based products that are rubbed under their noses. These products, however, offer a partial solution because they compete with odors, rather than eliminate them. Using plant extracts, Dr. Ruth Pinney, a Texas scientist, has developed *NOXO*, a soy-based gel that prevents the brain from smelling noxious odors by altering the brain's perception of the scent.

"It stops the brain's ability to smell things like decomposing flesh by causing the brain's olfactory receptors to smell something else – in this case, vanilla," said Pinney. *NOXO* is applied under the nose and it is non-toxic and non-irritating. Although scientists do not fully understand how *NOXO* alters the way the brain's cortex perceives the malodor, they do know that the effects are temporary. The gel lasts about two hours depending upon outside temperatures.

Pinney's development of the gel came as the result of one of her earlier creations: a training version of anti-personnel landmines that release a foul odor rather than explode. The "skunk mines" smelled so foul, it prompted the Los Angeles County Sheriff to ask her if she could also invent something strong enough to block the smell.

Intrigued with the challenge, Pinney began experimenting with plant-based extracts to see if she could change the brain's perception to chemical odors. She placed the combined odors from the plants that cause the brain to interpret the smell as vanilla into a soy-based gel. Wayne Barte, a project manager at the Department of Justice Office of Law Enforcement and Technology Commercialization (OLETC), heard about Pinney's work just in time for one of the largest clean-up efforts in recent history. "Right after September 11, we were challenged with what we could do to help first responders," said Barte. He arranged for some of Pinney's samples to be transported to Ground Zero by humanitarian aid flights. Two days later, he called back asking for everything she had in her garage, because the initial samples were gone.



Photo courtesy of Eastern Kentucky University Justice & Safety Center

Barte realized this was a product first responders could definitely use, and OLETC funded Dr. Pinney's work to help make the gel commercially available. Pinney said she considered the need for first responders to be able to smell things such as a gas leak, and said the product does not block the smell of the additives to natural gas.

NOXO has also been used by Sgt. Michael Flannery of the Chicago Police Department Forensic Services Unit. "It has been very effective at blocking the majority of the decomposition odor," said Flannery. He issued samples of the gel to his unit, and according to his team's feedback, the product improved their working conditions. "We cannot do anything about the sense of sight, but the sense of smell was the sense that most offended in crime scene investigations where the victim was in an extreme state of decomposition," said Flannery. He added that all of his evidence technicians and forensic investigators now use it.

NOXO has also been used in search and rescue missions in other countries, including the Bali Tsunami in December 2004, where Pinney said the gel enabled first responders to work faster and thus recover bodies more quickly, decreasing the chance of disease spreading.

Pinney is now directing further research at Adoodle, Inc., a private company funding a second-generation product that Pinney hopes to package with a spreading tool for ease of application.

For more information on *NOXO*, visit www.noxoinfo.com.

SEEING IS BELIEVING

Mobile Communications Platform Relays Real-Time Intelligence

Law enforcement officers rely on radios to share important information in the field during every mission, from drug busts to surveillance operations. As a result, police departments must rely on their officers' ability to create mental images from descriptions given in rapidly changing situations. A software program called RealityVision makes it possible for more than the officer on the scene to see what is happening in real time using devices police departments already own, thus providing situational awareness to the command staff.



Photo courtesy of Eastern Kentucky University Justice & Safety Center

Officer shown using RealityVision software on a mobile device



Photo courtesy of Eastern Kentucky University Justice & Safety Center

Kentucky State Police Special Operations Branch test RealityVision software

RealityVision is an Internet protocol (IP)-based program that runs on commercial off-the-shelf (COTS) hardware, such as cell phones and personal computers. The software is compatible with a variety of mobile devices, and it can be used as a stand-alone application or integrated into other larger software systems. "As long as you have Windows Mobile or a Blackberry [device], it doesn't matter what carrier you are with," said Brian Geoghegan, co-founder and chief product officer at Reality Mobile, the company producing the RealityVision software. The system's server software creates a secure network on the user's server and protects communications through user authentication and SSL data encryption. A single server can support up to a hundred simultaneous users.

Recently, the U.S. Department of Homeland Security Science & Technology Directorate's First Responder Technologies (R-Tech) Program funded Oak Ridge National Laboratory to work with the Kentucky State Police (KSP) Special Operations Branch to test RealityVision. The KSP used RealityVision during an actual operation and was pleased with the results. "Typically we just communicate by radio, but this time I could use my phone, and another guy had his laptop logged in, and we watched the suspect's vehicle on the screens in real-time," said Sgt Jeremy Slinker. He added that they were able to avoid confusion about the description of vehicles or suspects because they were able to see both for themselves.

RealityVision does not require any technological expertise. "All you have to know is how to use your phone or PC," said Geoghegan. Moreover, since the system uses items that first responders already own, it does not add to the long list of items they already need to carry.

In addition to finding the software simple to use, KSP noted that RealityVision is compatible with Google Earth, providing the service with global positioning system (GPS) capability. During the operation, each of the detectives turned on their GPS units, and each of the users was able to view the positions of everyone involved. If the operation had gone mobile, Slinker could have easily kept track of the operation and his officers. "I was able to pull up a map and zoom in to the city we were in and track where everyone was," he said.

Seeing is Believing (continued)

Slinker cited other potential scenarios where the system could be used. KSP conducts a lot of rural operations, where their communications ability is limited. One such use of the system could provide situational awareness for marksmen observer teams gathering intelligence for the officers, who are often in the field or in wooded areas. The observers will be able to use all camera features, including zoom and night vision, and can send real-time information to other officers via laptop computer. Officers will then be able to scout and plan while an observer team is mobile. "It will save a lot of time," said Slinker. "When serving a high-risk warrant, we'll let the observers film the location using RealityVision so that as the entry team is on the way in, instead of depending on radio traffic, I can sit in the raid vehicle and be watching in real time." Slinker said his team can acquire real-time intelligence without a delay in receiving other important information such as suspects entering or leaving a location.

During the KSP operation, Slinker said that not only were the involved officers able to watch the bust in real time, their commander was also watching everything on his phone as it happened. "From commander to assistant commander to team leader, you're always wondering the status; how it's going," said Slinker. Rather than going to the field, commanders can check the status of an operation, securely, from their desks via a phone or laptop. Slinker also stated that on a command level, the device is an asset because KSP will now be able to monitor and evaluate operations all around the state.

For more information on RealityVision, visit www.realitymobile.com.



THE RESPONDER KNOWLEDGE BASE

RKB's New Interface

The Responder Knowledge Base (RKB) (www.rkb.us) recently changed its interface to better serve the responder community. Although the look of the site has changed, the menu structure remains the same, and the site continues to offer the same valuable information as before. Users should also find the navigation very similar to what they have used in the past.

RKB has also added new features. The homepage now displays relevant news items, and updates them frequently. Additionally, the RKB Website now hosts an events calendar, where upcoming conferences and events relevant to the user community will be posted. To submit a suggestion for a conference or event that is relevant to the RKB community, please click on the "Contact Us" link.

Users may offer comments and suggestions regarding the new look to RKBMailbox@us.saic.com. User feedback is a very important component in continuing to improve the RKB's usability. All feedback is welcome and given equal consideration.

The screenshot shows the FEMA Responder Knowledge Base website. At the top, there is a navigation bar with tabs for Home, Products, Grants, AEL/SEL, SAVER, Other Content, and News Archive. A search bar is located on the right. Below the navigation bar, there are several sections:

- RKB Poll:** A section for user feedback with radio buttons for Grant information, Product information, Responder training information, News information, Ask an Expert, and Other.
- Welcome to the Responder Knowledge Base:** A central banner with a 'SAVER' logo and text about the SAVER Program Module Now Available on RKB, mentioning the U.S. Department of Homeland Security (DHS) and the System Assessment and Validation for Emergency Responders (SAVER) Program.
- Announcement of Grant Availability to Help States Upgrade 9-1-1 Services:** A section with a '911 COORDINATION OFFICE' logo, mentioning the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA).
- Revocation of Certificates of Approval issued to Jiansgu Tevin Nonwoven Fabrics Co., Ltd. (JTN):** A section with a 'NIOSH' logo, mentioning the National Institute for Occupational Safety and Health (NIOSH) and the U.S. Department of Health and Human Services.
- RKB Recommendations:** A list of recommended resources including Commercial Equipment Direct Assistance Program, Emergency Response Matrix, and DHS S&T Tech Solutions.
- Events Calendar:** A calendar for June 2009 with dates 1 through 30, where days with events are highlighted.
- Recent News:** A list of recent news items, including SAVER Program Module Now Available on RKB, Announcement of Grant Availability to Help States Upgrade 9-1-1 Services, Revocation of Certificates of Approval issued to Jiansgu Tevin Nonwoven Fabrics Co., Ltd. (JTN), H1N1 Virus Related to Fluorec 9, DHS Announces Nearly \$1.8 Billion in Fiscal Year 2009 Preparedness Grants, and Application Period to Open Assistance to Firefighters Fire Station Construction Grant.
- Archive:** A section for archived content.
- Partners:** A section for partner organizations, featuring the NIOSH logo and text: 'National Institute for Occupational Safety and Health Technology Laboratory http://www.cdc.gov/niosh/nptpl'.
- New Design Feedback:** A section for user feedback on the website design, with a 'Please Send Us Feedback' link.