THE SIREN

A First Responders Group (FRG) Newsletter September/October 2016

FRG Invites Industry to Meet First Responder Needs

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) First Responders Group (FRG) works with industry to meet first responder needs with existing technology, or new technology that can be tailored to first responder needs. It also funds industry partners, research centers, and universities to bring innovative ideas to life.

DHS held its second annual Strategic Industry Conversation Day event on October 20, 2016, to provide a forum where representatives from the industry could meet with DHS leaders. Around 470 industry partners registered for the event to learn more about DHS' current portfolio, as well as current and future mission needs. Deputy Director Dave Hart represented FRG at the event. Hart spoke at an S&T R&D focused panel titled "Research and Development: How to drive innovation."

"Imagine what we could do through increased communications and data sharing if we could reduce the response time of our EMS crews? How many lives would we save every year? Imagine if we could make personal protective equipment lighter, cooler, more flexible?" Hart asked as he addressed the panel audience.

In addition to our other DHS Components, FRG considers the 70,000 first responder agencies as its primary customers. It focuses on the state and local agencies' needs to make sure first responders are protected, connected and fully aware.

S&T is also looking into other areas that may benefit first responders, such as aviation security, verifying passenger identity, enhancing screening methods, biological environments, border security, advancing biometrics identity, tunnel detection, and cyber security.

Hart discussed the Project Responder 4 (PR4) resource document that identifies a set of enduring and emerging capability needs, frames them into technology objectives, and assesses the state of science and technology to meet those needs. An updated version of the document, PR5, is forthcoming.

In This Issue:

FRG Invites Industry to Meet First Responder Needs

FRG & RDP Bring Innovative Tech to Responders through EMERGE

Boston Experiment Demonstrates a Fully Interoperable Communications System

Annual VQiPS Workshop Discusses Public Safety's Unique Video Needs

FRG Pilots New Technology During Hurricane Matthew

Video Spotlight

View more FRG videos here!

Homeland Security
Science and Technology

FRG in S&T News

S&T's Under Secretary Discusses Resilience in Smart Cities

S&T, NASA Unveil Online Tool to Help Prepare for Solar Storms

FBI Hazardous Devices School Becomes REDOPS Testbeds

S&T's Prepaid Card Reader Aids Law Enforcement in Seizing Fraudulent Cards

Check out the latest FRG Articles

New Turnout Ensemble Aims to Reduce Firefighter Cancer Risk

Harnessing the Potential of Unmanned Aircraft Systems Technology

New Alert System Aims to Protect Responders (and Drivers) at Roadway Incident Scenes

Responder Spotlight: Jill Ramaker

Check out the S&T Newsroom for more Responder News!

FRG & RDP Bring Innovative Technologies to Responders through *EMERGE*

In partnership with S&T's Research and Development Partnerships Group (RDP), FRG hosted a two-day *EMERGE* 2016: Wearable Technology Accelerator "Meet the Startups Event" at the Center for Innovative Technology (CIT) in Herndon, Virginia, on October 11 and at S&T on October 12. *EMERGE* Wearable Technology represents one way S&T works with the startup community to bring wearable technologies to first responders.

The selected startups at the event were Augmate, HAAS Alert, Human Systems Integration, Lumenus, LuminAID, Pear Sports, Six15, Vault RMS, and Visual Semantics. Each of these startups focus on engaging with first responders, strategic industry partners, and investors to develop solutions that can help the Responder of the Future. For example, one of the companies is developing LED lights for responder uniforms and gear that changes colors to indicate vital health information, such as oxygen levels. Another company designed software that will allow first responders to use real-time facial recognition to quickly assess and react to situations in the field.

The first day of the event focused on the startups engaging directly with first responders and subject matter experts about their needs and technology challenges to learn about the type of equipment first responders wear and the challenging environment they work in.

Day two involved a leadership level interactive session with the startups, two dozen first responders, several homeland security personnel, and *EMERGE* partners. Throughout the day at both events, participants had the opportunity to review the technologies presented by the companies and engage with their products. These events helped the startups to better understand the technology requirements of first responders and identify potential use cases for their products.

S&T Under Secretary Dr. Reginald Brothers attended the session at S&T and commented about the value in the startups' work, "Your ideas were not only innovative, but also inspiring for where we are taking wearables for first responders!" Dr. Brothers expressed his excitement about the great work that is being done under *EMERGE*.

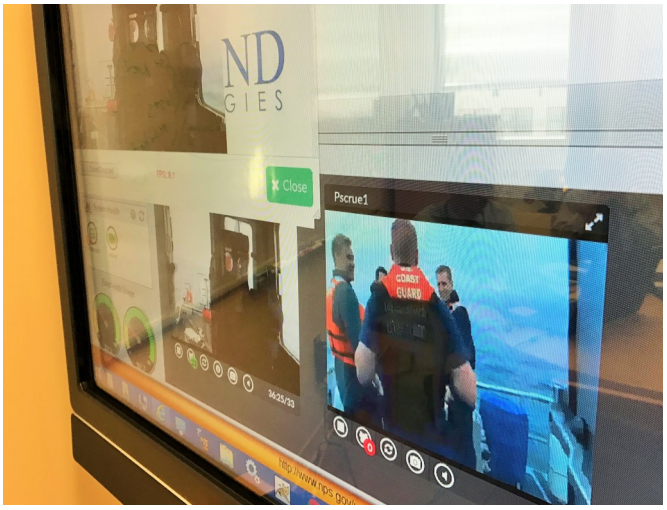
S&T's work on the *EMERGE* Program is laying the foundation for how the Homeland Security Enterprise will tackle the difficult challenges faced by the first responder community.

The next *EMERGE* demonstration will be held December 14-15 in Chicago, Illinois, and will showcase the startups' final prototypes. Stay up-to-date on the latest information and details on upcoming demonstration days for the S&T *EMERGE 2016: Wearable Technology* program through the *EMERGE* website.

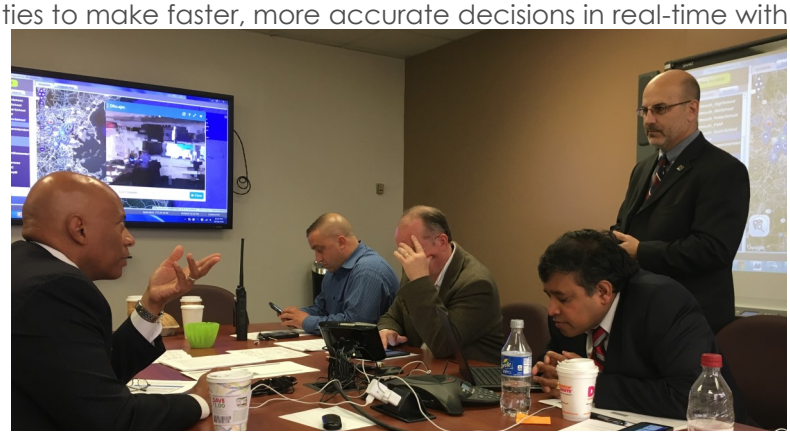
Boston Experiment Demonstrates a Fully Interoperable Communications System

On October 18, FRG's Next Generation First Responders (NGFR) team conducted a component communications experiment at the Massachusetts Governor's Executive Office of Public Safety and Security (EOPSS). The purpose of the experiment was to demonstrate the ability to provide commercially available, fully interoperable communications systems – voice, data, and video – to local, state, and federal first responder organizations.

During the experiment – which simulated a scenario around a suspicious vessel believed to be carrying drugs and guns offshore – live-streaming video feeds from U.S. Coast Guard (USCG) vessels and aerial drones were sent into the cloud and broadcast onto the Public Broadcasting Television spectrum via both Datacasting and the internet. The NGFR team successfully demonstrated the capability to broadcast these video feeds to multiple agencies and locations, including the USCG, Federal Emergency Management Agency, Customs and Border Protection, Transportation Security Agency , Federal Law Enforcement Training Centers, local Boston police, and S&T headquarters in Washington, DC. Datacasting was also used to send data, including files, photos, and text messages, to all locations. Simultaneously, interoperable voice capabilities were demonstrated using traditional Land Mobile Radio patching between all demo participants, and interoperable voice, video, and data was demonstrated using Mutualink, a communications platform that enables community-wide sharing in a secure environment.



"The success of this experiment shows how security officials can leverage existing capabilities in their own communities to make faster, more accurate decisions in real-time with stakeholders at the federal, state, and local levels," said S&T Under Secretary Dr. Reginald Brothers. "This pilot was also valuable because it showed how datacasting allows one-to-many data distributions of video and data, without straining existing public safety commercial networks."



Datacasting Program Manager Cuong Luu added, "Datacasting vastly improves how video and data is currently shared by responders, providing a better means of collaboration so they can have the situational awareness they need to quickly respond to incidents. This successful exercise further demonstrated the usefulness of this tool. We hope first responders all over the nation will begin to use it as it becomes available nationwide."

Annual VQiPS Workshop Discusses First Responders' Unique Video Needs

Recently, nearly 100 public safety, industry, academia, and federal government attendees gathered for the annual Video Quality in Public Safety (VQiPS) Workshop. In advance of the workshop, Program Manager Cuong Luu and members of the VQiPS Leadership Team identified key strategic themes and actionable ideas that will serve as a guidepost for VQiPS' strategic direction. The strategic themes included: expanding on video analytics and forensics, diversifying first responder and industry represented in VQiPS, and increasing outreach and education to grow the VQiPS user base. The two-day workshop consisted of several panels, case studies, and presentations, including a Body Worn Cameras and Wearables panel, a session focused on the program's new Policy Considerations document, and several sessions around emerging technology updates from industry.

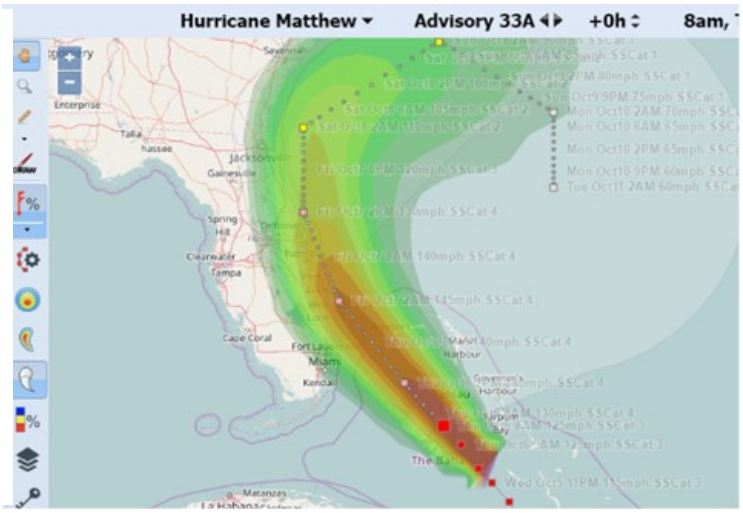
VQiPS provides information and support to first responders so they can articulate and ultimately purchase products to support their own unique video needs. Smaller agencies often do not have the resources needed to have technical video expertise on staff, and that is the gap that VQiPS attempts to fill. Through unbiased guidance and educational resources, VQiPS assists the first response community in assessing their use case and providing access to expertise that can help the agency clearly define and communicate their video quality needs to industry.

"Through the great discussion and practitioner feedback that occurred during our recent VQiPS Workshop, I'm excited about the prospect of more formally establishing video analytics as a thrust area for the VQiPS Program. This thrust area will entail an ongoing, close partnership between S&T, National Institute of Standards and Technology (NIST) and the Public Safety Communications Research Program (PSCR)," said Luu.

For more VQiPS related documents, please visit the FRG Publications page.

FRG Pilots New Technology During Hurricane Matthew

In response to Hurricane Matthew, FRG's National Hurricane Program (NHP) Technology Modernization team is collaborating in multiple ways across federal, state, and local governments. HURREVAC-eXtended, or HVX, is a web-based storm-tracking and evacuation decision-making support system. By integrating new technology, tools, training, and simulation capabilities into a single decision support platform, state and local emergency managers can compile all of the relevant forecasts and data into one interface that will be mobile device accessible. Evacuation zone specific analysis tools assist emergency managers to understand potential storm impacts and forecasts despite the uncertainty of weather threats to ultimately improve the efficiency and effectiveness of evacuations. These improvements will reduce the occurrence and impact of over evacuations and under evacuations, saving both money and lives.



The NHP Technology Modernization team is also developing downloadable applications for mobile devices as part of HVX. The current beta version was released to the Federal Emergency Management Agency (FEMA) regional hurricane program managers in July. Periodic updates were made as feedback came in. HVX's surge viewer enables users to analyze the risk of specific storm scenarios, and to visualize clearance time data in new ways. An update was released on October 5, in advance of Hurricane Matthew's U.S. landfall. The update will improve upon the previous capabilities and allow access to county-level evacuation zone data and new zone-based surge impact products. HVX also contains current and complete federal databases of state and local evacuation zones. While currently only available to FEMA regional managers, the team also made the system available to a limited number of emergency management organizations in the storm's path.

In addition, the NHP Technology Modernization team monitored FEMA and NHP Hurricane Liaison Team (HLT) conference calls, and deployed a team member to the Florida Emergency Operations Center (EOC) and the FEMA National Response Coordination Center (NRCC) to observe and collect data on the evolution of the decision-making process at the operational level. Observations and data collected will be used to further develop and improve the capabilities of HVX.

An NHP Technology Modernization Working Group meeting was held on October 20 with representatives from FEMA regions and headquarters, U.S. Army Corps of Engineers, National Hurricane Center, and select state and local Emergency Managers to discuss lessons learned from Hurricane Matthew and how they can be leveraged to enhance the capabilities of this next generation decision support platform. Feedback received on use of the tool was very positive.

The team will also be working with the National Emergency Managers Association (NEMA), North Carolina Emergency Management, and other affected states on developing a post storm assessment capability within HVX.

Helpful Links

scitech.dhs.gov/first-responders

scitech.dhs.gov

facebook

YouTube

Instagram

twitter

For questions, comments or suggestions, please email: first.responder@hq.dhs.gov.