

THE SIREN



A First Responders Group (FRG) Newsletter

March/April 2016

FRG Looks to Invest in Smart Fabrics to Support First Responders



FRG is pushing its research and development capacity limits by exploring a new platform for technology: smart fabrics.

After speaking at a recent panel hosted by the Department of Commerce and the Industrial Fabrics Association International at the Smart Fabrics Summit, FRG Director Daniel Cotter said the use of smart fabrics as a technology platform is "something FRG can build off of."

"Over all," Cotter said, "we need to think of smart fabrics as being a 'technology platform' to support the [Next Generation First Responder Apex Program](#) which is specifically designed to help tomorrow's first responder be better protected, connected and fully aware. This platform is really an interesting concept for us to be thinking about in the future."

According to Cotter, first responders can expect to see the results of research and development in the smart fabrics community soon. "I am expecting next fiscal year we will make a major push into this tech. We could be prototyping things here in the next 18 months. Given testing cycles and certifications, I would say we can expect to see initial products on the market in two or three years."

FRG will also be considering how to best partner with other research organizations, such as the Armament Research Development and Engineering Center (ARDEC) at Picatinny Arsenal. Located in New Jersey, ARDEC is an internationally acknowledged hub for the advancement of armament technologies and engineering innovation.

FRG is already working on technologies that have the potential to be embedded in smart fabrics. In the future, wearables that can locate first responders during emergencies, house physiological monitoring devices and that detect hazardous materials may be integrated directly into actual garments to keep first responders safer.

"The characteristics of smart fabrics are very exciting for us. The idea that you can build microelectronics into fabrics so they can conduct energy and gain power from your movement, such as harnessing vibrations, sound or heat is something we need to leverage to support the first responders," said Cotter.

FRG is committed to understanding more about this evolving technology and building partnerships throughout the research and industrial communities.

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NUSTL Hosts "Protected: Defending Against Life-Threatening Hazards" Forum

The National Urban Security Technology Laboratory (NUSTL) held its 37th New York Area Science and Technology (NYAST) forum on March 9. NYAST is a consortium of government organizations, first responders, academic institutions and private sector groups, which NUSTL developed and manages. The topic of this forum was "Protected: Defending Against Life-Threatening Hazards" and it highlighted technologies that can increase protection for first responders.

FRG's First Responder Technologies (R-Tech) Division Director Greg Price opened the forum with an introduction on R-Tech and cutting edge technology solutions that can improve first responders' protection and safety.

Technologies highlighted during the NYAST forum included the multi-threat base ensemble, personal protective equipment and physiological sensors, presented by R-Tech Deputy Director Bill Stout and Program Manager Bill Deso.



Over 45 NYAST members representing numerous federal, state and local entities of the homeland security community and private sector attended the forum, including representatives from the New York City Police Department, Boston Emergency Medical Services, the Environmental Protection Agency and Consolidated Edison.

This forum served as the second installment in a three part series focused on NGFR topics. NGFR is an FRG established program that focuses on the development of cutting edge solutions to improve first responders' protection and safety, reduce emergency response time and accelerate decision making. The final installment of the NGFR series is "Connected: Having a Lifeline When it's Needed Most" and will focus on the integration of a wide array of communications technologies currently available to first responders.

To become a NYAST member, please request access to the NYAST Community on the S&T First Responder Communities of Practice website: <https://communities.firstresponder.gov>.

FRG Employee Receives Federal 100 Award as Children's Champion



Our very own Patricia (Patty) Wolfhope was recognized as a winner of one of the Federal 100 awards in early April. For 27 years, Federal Computer Week (FCW) magazine has selected 100 talented civilian and defense recipients who demonstrated excellence in the federal IT community. The 100 awardees are selected because they represent new ways of thinking, fresh approaches to problem-solving, and a spirit of dedication and accountability that has changed the way government interacts with its constituents.

Patty was nominated as 'Children's Champion' for the Federal 100 by the Child Exploitation Investigations Unit in U.S. Immigration and Customs Enforcement. Her nomination reads:

Wolfhope leads DHS' Child Exploitation Image Analytics program. She uses algorithms and forensic image analysis from seized child sexual abuse videos and still photos and data to detect and recognize faces for further forensic analysis. She and her team support more than 18,000 federal, state and local law enforcement agencies in their efforts to find imperiled children through the tens of millions of child exploitation images they collect each year. Her groundbreaking work has helped identify and rescue 350 children, and her passion is fueled by her own experience with almost losing her daughter to a would-be abductor.

Additional information can be found at: <https://fcw.com/fed100>.

Be sure to subscribe to these on firstresponder.gov!

FRG Hits Jackpot at International Wireless Communication Expo (IWCE)

The IWCE annual conference in Las Vegas, Nevada, on March 23-24 featured nearly 400 exhibitors showcasing the latest products and trends in the industry. It drew more than 7,000 individuals from a diverse group of industry professionals, including government, military, public safety, utility, transportation and business enterprise. As FRG aims to continue serving as a liaison between industry and end-users to identify cutting-edge solutions, this was not an event to be missed.

IWCE featured a town hall discussion, moderated by NGFR Director John Merrill and S&T spokesman John Verrico, along with a broad cross-section of first responders as panelists. This event provided an opportunity for responders from across the country to discuss critical technological gaps and for industry to interface with responders to build lasting partnerships.

FRG program managers also moderated and participated in five panel sessions. On behalf of the [International Forum to Advance First Responder Innovation \(Forum\)](#), FRG Program Manager K. Phil Waters participated in two sessions-*The Evolving Connected Public Safety Officer: The Coolest Gear, the Latest Tech* and *An International Roundup of Next-Generation Communications Systems*-providing a high-level overview of the Forum, a breakdown of its capability gaps and an overview of their forthcoming market analysis.

FRG Program Manager Sridhar Kowdley co-moderated "An Update on the Project 25 (P25) Compliance Assessment Program: Are You Ready for Some Testing?" with industry representatives to provide P25 stakeholders with critical updates on the [P25 Compliance Assessment Program](#) activities, including the recent establishment of its advisory panel.



During *The Implications of Video for Public Safety and Critical Infrastructure* panel session, FRG Program Manager Cuong Luu moderated a discussion surrounding the efficient use of video on a network, technology advancements in video compression and emerging trends in the use of public safety video. Recent [Datacasting](#) program activities and research papers on the [Video Quality in Public Safety effort](#) were also highlighted.

Finally, for the session "Can the Internet of Things (IoT) Save the World?" Merrill joined a panel of experts to discuss best practices for the many aspects of IoT. Key topics included: security, reliability, access and authentication, scalability, data analytics, new devices, system upgrades and technology.

The S&T booth presence held its own as well. FRG's technology display and leadership office hours in the booth were a big draw for industry and responders alike. FRG's presence yielded plenty of valuable stakeholder engagement opportunities.

FRG's First Facebook Town Hall Hosted in Vegas

FRG held S&T's first-ever Facebook Town Hall at IWCE on March 23. In partnership with S&T's Office of Corporate Communications (OCC), FRG gathered first responders from across the country to answer questions pertaining to NGFR via the [S&T Facebook account](#).

FRG's team of John Merrill, Stacey Levitt and Paul Frommelt were joined by OCC's John Verrico in Las Vegas, while OCC's Amanda Glenn and Jessica Tozer, and FRG's Marc Caplan worked from S&T's headquarters. Our first responder panelists included Ashanti Gray with the Las Vegas Fire Department, Jack Hanagriff with the Houston Mayor's Office, Kyle Lemmon with the Clark County Fire Department, Adam Miller with the Huntingdon County Sheriff's Office, Dion Rodriguez and Ryan Hayward from Nellis Air Force Base. The panelists answered questions relating to terrorism, small business innovation and resilient communications.

The bi-coastal effort saw more than 60 questions from 173 active participants. Questions came from a mix of Facebook followers, including industry, innovators, small business and the responder community. Approximately 500 people viewed the Town Hall during the 30-minute session, with a total audience reach of 1,400. The event also boosted S&T's presence on the social platform, with a 51 percent page reach increase and nearly 60 new followers.

The success of the Facebook Town Hall reemphasized the effectiveness of social media to facilitate communication between FRG and its audience. FRG will continue to work with OCC on future Facebook Town Halls, with the next one scheduled for August.



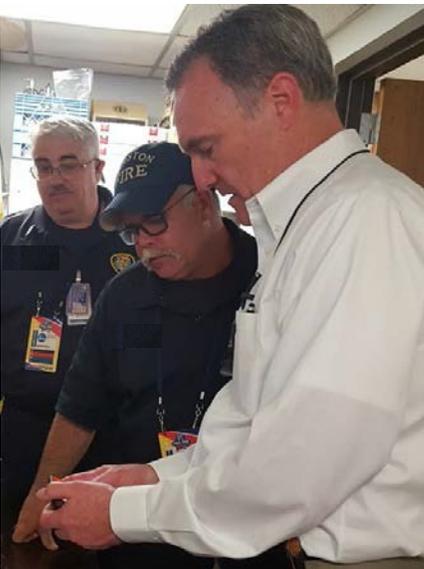
Datacasting: Changing the Game for Public Safety Communications

FRG's [datacasting](#) system was successfully used by the City of Houston to securely share information between different response agencies during the Republican Presidential Candidates' Debate on February 25, the NCAA Men's Final Four Basketball Tournament April 1-4 and the flooding caused by the storms that hit the city during the week of April 18.

During these events, datacasting allowed public safety officials to securely send and stream encrypted video, text messaging and other files to specific recipients using a dedicated portion of digital broadcast television spectrum. Officials were able to view live streaming footage from various security cameras stationed throughout the event locations and surrounding areas on their tablets and computers from their command posts. Helicopters were deployed throughout the events to monitor and capture footage from areas of concern (crowds, high traffic, flooded streets, etc.) allowing first responders to tend to the scene and ensure everyone's safety.



Additionally, field units were able to capture and upload live footage from their post locations where there were limited cameras or no coverage at all to share with nearby responders and the Emergency Operations Center (EOC). This greatly increased situational awareness and the ability to monitor and mitigate any potential safety issues. This was extremely important given how crowded these events were, with attendee totals nearing 75,000 daily at the Final Four games and related events.



Rick Flanagan Houston's Emergency Manager commented on the ease of using datacasting from a phone, "All you have to do is download the app and push a button, and you can have an integral part in capturing information."

Users also leveraged the datacasting network to share each other's EOC displays to gain access to additional camera views that could benefit other parties.

"Datacasting has helped close communication gaps by giving us the ability to push information to public safety personnel that otherwise wouldn't have access to this information, including those in other disciplines and jurisdictions," said Jack Hanagriff of Houston's Office of Public Safety and Homeland Security (OPSHS).

The Houston Police Department, Houston Fire Department, Harris County Sheriff's Office, Joint Hazards Assessment Team and public safety partners from the George R. Brown Convention Center and NRG Stadium all participated in the operational use of datacasting.

Due to the positive impact of the datacasting system and the support provided by S&T, Johns Hopkins University Applied Physics Lab and subcontractor SpectraRep, the director of OPSHS Dennis Storemski personally thanked the team for their support

He noted, "It took a great deal of time and planning to have the event run as it did. Thank you for your participation, input and continued service in support of the first responder community."

During the torrential storms that hit the city, the Houston Fire Department used the tool to survey flooded areas. The helicopter sent to monitor the scene did not have an on-board camera, so a smartphone was used to capture and stream footage via the datacasting system. The footage was easily accessed by the EOC and shared on a laptop in a conference room with city leaders, giving them the ability to quickly evaluate affected areas.

Jack Hanagriff commented, "This software is giving us the ability to quickly and easily accommodate needs and fill capability gaps." Houston will continue to use this tool during significant events, daily operations and potentially during the Super Bowl next year.



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