Public Safety Communications Research Program PSCR

Quarterly Newsletter

In the News

NYU Wireless Partners to Develop Communication Technology with NIST Award

By Photonics.com

The U.S. Commerce Department's National Institute of Standards and Technology (NIST) awarded $2.3 million over three years to the NYU Wireless Research Center at the New York University Tandon School of Engineering, which will work with Italy's University of Padova, the Austin Fire Department, and NYU Wireless industrial affiliates to create a research platform for public safety communications using frequencies above 6 GHz in the mmWave spectrum.

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PSCR: Fidel Liberal Explains how Mission-Critical Open Platform can Bolster Development of Public-Safety Solutions

By Donny Jackson | Urgent Communications

Fidel Liberal, an assistant professor at the University of Basque Country in Spain (Universidad del País Vasco), describes the planned mission-critical open platform—usable by any developer wanting to build public-safety LTE solutions—that will be established with a $1.259 million research program grant from the Public Safety Communications Research (PSCR) division at the National Institute of Standards and Technology.

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Recent Events

2017 Annual Public Safety Broadband Stakeholder Meeting

The 2017 Public Safety Broadband Stakeholder Meeting was held in San Antonio, Texas June 12-14. The meeting featured dynamic presentations from leaders in the public safety communications arena, including keynote remarks from Sue Swenson, FirstNet Chair; Anthony Treviño, San Antonio Police Department; and Jeff Johnson, FirstNet Board Vice Chairman & Retired Fire Chief. The meeting highlighted PSCR Public Safety Innovation Accelerator Program Grant receiptants, and provided snapshots into key PSCR technical foscus areas.

For a full recap of the meeting, visit the 2017 event page.

Public Safety Enhanced User Interface Roadmap R&D Summit

The User Interface Roadmap R&D Summit allowed PSCR stakeholders to build on the findings published in the recent Public Safety User Interface R&D Roadmap. It provided an anvenue for public safety end-users, industry and academic experts, and federal partners to prioritize the areas of need identified in the roadmap and gather additional technical, measurement, and operational requirements to further inform PSCR's R&D project planning within its User Interface Portfolio.

NIST Awards $38.5 Million for Public Safety Communications Projects

By Kelly Hill | RCR Wireless News

Augmented reality helmets. Resilient fog computing. Mission-critical push-to-talk with direct device-to-device communication. Real-time video analytics. Precise and pervasive location-based services. These are just a few of the 33 projects that were awarded $38.5 million in funding by the National Institute of Standards and Technology's Public Safety Communications Research Division in its first round of grants to spur innovation in public safety communications.

Read More

Once published, the User Interface Roadmap R&D Summit Report will be available on the [PSCR wesbite](#).

Top Stories

50,000 Awarded to NIST Virtual Public Safety Test Environment Challenge Winners

In June, PSCR announced the winners of the NIST Virtual Public Safety Test Environment Challenge – a competition to design a physical measurement environment that uses immersive virtual reality tools for testing critical first responder technologies. In just 60 days, the challenge generated a following of over 700, culminating in 103 registered competitors via the [HeroX](#) community.

Six winners were selected from a diverse pool of entries. The winning submissions provided viable and creative solutions for designing a measurement environment for accurate and repeatable testing of new interfaces and technologies for public safety.

First Place - [Jason Jerald](#), NextGen Interactions for FirstSimVR, a versatile VR system that can be configured for specific first-responder scenarios in order to prototype, evaluate, and inform improved design of early virtual and physical prototypes.

Second Place - [Zach Huber](#), Design Interactive, for a Reconfigurable Vehicle Training System, a mixed reality environment within reconfigurable cars.

Third Place - [UNSN](#) for MultiVRse - parallel physical and VR universes, with auto VR visualisation matching the physical space, untethered and unbounded VR, interactions with real & VR objects which will capture full body movement up to each individual figure with no external cameras or sensors.

Fourth Place - [Kirk McKinzie](#), Cosumnes Fire Department, for their idea of an Augmented Reality Emergency Response System, a multi-sensor based, indoor positioning technology to simulate a first responder emergency situation through a wearable SMART device.

Crowd Voting Award - Variable Labs for their submission "The Future is Hidden in the Success of the Past," highlighting the need to leverage interoperable standards to define a high-level architecture to establish a baseline for interaction modalities and biometric feedback datasets in order to provide a path to creating key performance indicators (KPI) which can help measure system performance and define future enhancements.

Honorable Mention - John Quarles and his team from MedCognition, received the Honorable Mention award for PerSim, a realistic, portable, and lower cost solution to train first responders using augmented reality simulation.

Open Innovation is an essential element to PSCR's strategy. This challenge represents the first in a series of crowdsourcing opportunities. PSCR will continue to seek out solvers and innovators that can help to advance public safety communications and accelerate the adoption of critical technologies through creative ideas and smart solutions.

Fore more information on PSCR Open Innovation and to stay up-to-date on open opportunities, visit our website.

NIST Awards $38.5 Million to Accelerate Public Safety Communications Technologies

The U.S. Commerce Department's National Institute of Standards and Technology (NIST) has awarded $38.5 million to 33 research and development (R&D) projects aimed at advancing broadband communications technologies for first responders.

Through programs like FirstNet, President Trump and this administration are working hard to keep Americans safe," said Secretary of Commerce Wilbur Ross. "These grant awards will help fulfill our mission, ensuring that first responders have access to advanced tools that can save lives."

The multiyear grants are intended to help modernize public safety communications and operations by supporting the migration of data, video and voice communications from mobile radio to a nationwide public safety broadband network, as well as accelerating critical technologies related to indoor location tracking and public safety analytics.

The grants are part of the Public Safety Innovation Accelerator Program funded by NIST's $300 million allocation from the 2015 auction of advanced wireless service licenses. The Middle Class Tax Relief and Job Creation Act of 2012 provided the funding so that NIST could conduct an R&D program to help public safety overcome critical technical barriers, spur innovation as well as investment in public safety broadband, and realize the full potential of wireless broadband capabilities.

NIST reviewed 162 proposals from a diverse pool of national and international applicants across industry, academia and public safety organizations. The 33 selected projects span five key technology areas that have the potential to greatly enhance public safety communications and operations:

- Mission Critical Voice (moving from traditional radios to cellular systems)
- Location-Based Services (conducting indoor positioning, navigation and mapping)
- Public Safety Analytics (handling and exploiting more data)
- Research and Prototyping Platforms (enabling low-cost R&D tools)

- Resilient Systems (ensuring systems work in poor conditions)

Additional details may be found on the [Public Safety Communications Research](#) website.

The awardees and their projects are:

Carnegie Mellon University (Pittsburgh, Pennsylvania) - $782,280
An Infrastructure-Free Localization System for Firefighters

Carnegie Mellon University (Pittsburgh, Pennsylvania) - $642,039
Hyper-Reality Helmet for Mapping and Visualizing Public Safety Data

Carnegie Mellon University (Pittsburgh, Pennsylvania) - $1,800,000
Real-Time Video Analytics for Situation Awareness

Cornell University (Ithaca, New York) - $1,241,825
Towards an Emergency Edge Supercloud

George Washington University (Washington, D.C.) - $700,000
Coverage, Capacity, and Resilience Enhancement in Limited PSN

Harris Corporation (Melbourne, Florida) - $200,464
ProSe

Massachusetts Institute of Technology (Cambridge, Massachusetts) - $799,000
Situational Awareness for Emergencies Through Network-Enabled Technologies (SafeT-Net)

Michigan Technological University (Houghton, Michigan) - $1,007,049
Resilient System Solutions for Data Sharing for Wildland Fire Incident Operations

Misram LLC, doing business as Spectronn (Holmdel, New Jersey) - $649,984
Heterogeneous Fog Communications and Computing for Resilience

New Jersey Office of Homeland Security and Preparedness (Trenton, New Jersey) - $1,701,657
Fiscal Year 2017 Public Safety Innovation Acceleration Program

New York University (New York, New York) - $2,265,051
End-to-End Research Platform for Public Safety Millimeter Wave Communications

Prominent Edge LLC (Nokesville, Virginia) - $500,218
StatEngine: A Real-Time Open Source Data Analytics and Visualization Platform for Public Safety

Software Radio Systems Limited (Cork, Ireland) - $1,453,100
OpenFirst

Sonim Technologies, Inc. (San Mateo, California) - $1,398,950
End-to-End Mission Critical Push to Talk with Direct Mode Operation

Southern Methodist University (Dallas, Texas) - $1,343,952
SAFE-NET: An Integrated Connected Vehicle and Computing Platform for Public Safety Applications

Texas A&M Engineering Experiments Station (College Station, Texas) - $1,800,000

DistressNet-NG: Resilient Mobile Broadband Communication and Edge Computing for FirstNet

TRX Systems, Inc. (Greenbelt, Maryland) - $1,414,605
TRX First Responder Location and Mapping Services

Universidad del Pais Vasco/Euskal Herriko Unibertsitatea (Leioa, Spain) - $1,259,143
Mission Critical Open Platform (MCOP)

University of California – Irvine (Irvine, California) - $1,960,613
Ultimate Navigation Chip (uNavChip): Chip-Scale Personal Navigation System Integrating Deterministic Localization and Probabilistic Signals of Opportunity

University of California – Riverside (Riverside, California) - $1,223,527
Modeling and Development of Resilient Communication for First Responders in Disaster Management

University of Cincinnati (Cincinnati, Ohio) - $398,869
First Responder Indoor Location Using LTE Direct Mode Operations

University of Cincinnati (Cincinnati, Ohio) - $500,364
Information-Driven Video Communication for Public Safety Networks

University of Colorado (Boulder, Colorado) - $1,502,796
SDR LTE Network Testbed and RESPONS

University of Houston (Houston, Texas) - $1,577,626
Multi-tiered Video Analytics for Abnormality Detection and Alerting to Improve Response Time for First Responder Communications and Operations

University of Michigan (Ann Arbor, Michigan) - $688,938
Body-Worn Camera Analytics (BOCA) in Public Safety

University of Michigan (Ann Arbor, Michigan) - $997,873
Decimeter Accurate, Long Range Non-Line-of-Sight RF Localization Solution for Public Safety Applications

University of Oxford (Oxford, United Kingdom) - $1,182,904
Pervasive, Accurate and Reliable Location Based Services for Emergency Responders

University of Southern California (Los Angeles, California) - $449,101
Propagation Channel Models and System Performance for Device-to-Device Communications for Public Safety Applications

University of Virginia (Charlottesville, Virginia) - $1,119,854
Towards Cognitive Assistant Systems for Emergency Response

University of Washington (Seattle, Washington) - $1,000,000
Modeling, Simulation and Performance Evaluation for Future Public Safety Networks

Vencore Labs, Inc., doing business as Applied Communications Science (Basking Ridge, New Jersey) - $1,962,779
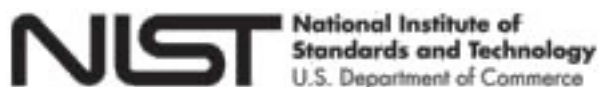Device-to-Device System for Public Safety (DDPS)

Voxel51 LLC (Ann Arbor, Michigan) - $1,241,189

ETA: Extensible Tools for Analytics in Public Safety

Western Fire Chiefs Association, Inc. (Wilsonville, Oregon) - $1,741,548
Creation of a Unified Analysis Framework and the Data Comparison Center

Award amounts have been rounded to the nearest dollar.

As a non-regulatory agency of the Commerce Department, NIST promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life. To learn more about NIST, visit www.nist.gov.

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