

# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS

The Public Safety Communications Research (PSCR) Division is the primary federal laboratory conducting research, development, testing, and evaluation for public safety communications technologies.

It is housed within the Communications Technology Laboratory (CTL) at the National Institute of Standards and Technology (NIST). It addresses the R&D necessary for critical features identified by public safety entities beyond the current generation of broadband technology.

## VISION

Through the use of advanced communications technologies, the public safety community can more effectively carry out their vital mission to protect lives and property— from day-to-day operations to large events and emergencies.

## MISSION

To fulfill this vision, PSCR collaborates with public safety, industry, academia, other Federal Government agencies, and the solver community to advance next-generation communications technologies that meet the operational requirements of first responders through research, development, and innovation.



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USER EXPERIENCE



LOCATION-BASED  
SERVICES



MISSION CRITICAL  
SERVICES



INNOVATION  
LAB



UNCREWED  
AIRCRAFT SYSTEMS





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## RESEARCH FACILITIES

### Public Safety Innovation Lab



40-Gigabit  
Core LTE  
Network



P25 Phase 1 & 2  
LMR System



2 RF Chambers  
for Testing  
Devices



Interoperability Lab  
Interconnecting LMR  
and LTE Systems

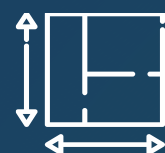


Virtual and  
Augmented  
Reality Lab



Mobile Research  
Vehicle for Field  
Measurements

### Public Safety Immersive Test Center



A Modular  
Layout



A Motion Capture System with 62 High  
Speed Optical Tracking Cameras  
Capable of Centimeter Accuracy



A Variety of Augmented  
& Virtual Reality  
Headsets



A Mobile Staircase &  
Other Equipment for  
Z-Axis Motion



Physical Furniture and  
Gear to Add a Tactile  
Component to Simulations



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## PRODUCTS

### Measurement Method Metrics



MCV Quality Of  
Experience



Public Safety  
Push-To-Talk  
Modeling



XR Test Bed  
for Usability



Uncrewed Aircraft  
System Technology  
Acceleration



Indoor  
Localization  
Accuracy

### Research Tools



**30** Open-Source  
Software



**116** Internal  
Publications

### Standards

**LTE**

483 Contributions for Public  
Safety Service & Feature  
Requirements, Architecture,  
& Protocol Specifications

**LMR  
to LTE**

Initiated Many 3GPP Standards-  
based LMR to LTE Interfaces for  
Public Safety

## REACH

### Hosted Events

More than  
**118**

Stakeholder Engagements  
Since 2016

### Lab Visitors

More than  
**3446**

On-site and Virtual  
Visitors Since 2016

## STAFF

**32**

Staff Members Working  
on PSCR's Mission



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## EXTRAMURAL RESEARCH

### Grants and Cooperative agreements



**\$108M**

In Grants  
Awarded to Date



**262**

Total Award Recipients,  
Subcontractors, and Public  
Safety Practitioners



**209**

External Software Resources



**11**

Patents  
Granted



**16**

Patent  
Applications  
Submitted

### Open Innovation



Winners from  
**31 STATES**  
&  
**7 COUNTRIES**



**22**

Challenges  
Launched



**286**

Winning  
Teams



**\$8.1M**

In Prizes  
Awarded  
To Date



**794**

Prizes  
Awarded



**1,127**

Total  
Submissions

## Commercialization Highlights

**36** public safety organizations involved in  
commercialization efforts

**20** funding opportunities with public  
safety demonstrations and pilot  
projects

**10** agencies that provided SBIR follow-on  
funding to commercialization program  
participants

## Research Publications

**355**

External Journal and Conference  
Publications