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.

**MISSION**

PSCR is driven towards advancing public safety communications technologies by accelerating the adoption and implementation of the most critical communications capabilities to ensure the public safety community can more effectively carry out their mission to protect lives and property during day-to-day operations, large scale events, and emergencies.

**PROMISE**

PSCR accelerates innovation by investing in research to transform the future of public safety communications, technology, and operations.
PULLING THE **FUTURE FORWARD**

**5 KEY RESEARCH AREAS**

- **LMR TO LTE**
- **LOCATION-BASED SERVICES**
- **MISSION CRITICAL VOICE (MCV)**
- **USER INTERFACE USER EXPERIENCE**
- **PUBLIC SAFETY ANALYTICS**

**TWO CROSS-CUTTING RESEARCH AREAS**

- **SECURITY**
- **RESILIENT SYSTEMS**
As the leading research facility, PSCR supports the development of a nationwide network and impacts the following strategic priority areas:

- **AI to Increase Operational Response**
- **5G IoT Sensor Networks for Public Safety**
- **Live 3D Indoor Tracking**
- **Public Safety Resilient Communications**
- **Public Safety Next Generation Heads Up Displays**
PULLING THE FUTURE FORWARD

ABOUT PSCR

5 KEY RESEARCH AREAS

STRATEGIC TOPIC AREAS

RESEARCH PARTNERS

INTRAMURAL IMPACTS

EXTRAMURAL IMPACTS

PSCR.GOV

NIST PUBLIC SAFETY COMMUNICATIONS RESEARCH
# Pulling the Future Forward

## About PSCR

- 5 key research areas
- Strategic topic areas
- Research partners
- Intramural impacts
- Extramural impacts

## Products

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## Standards

- **LTE**
  - 483 contributions for public safety service & feature requirements, architecture, & protocol specifications

- **LMR to LTE**
  - 3GPP-standards-based LMR to LTE interfaces for public safety

## Unique Resources

**Public Safety Innovation Lab**

- 40-Gigabit Core LTE Network
- P25 Phase 1 and 2 LMR System
- 2 RF Chambers for testing devices
- Interoperability Lab: Interconnecting LMR and LTE systems
- Virtual & Augmented Reality Lab
- Mobile Research Vehicle for field measurements
- Public Safety Immersive Test Center for real-world simulations

**Intramural Impacts**

- **Intramural Impacts**
  - MCV Quality of Experience
  - Public Safety Push-to-Talk Modeling
  - Virtual Reality Environment
  - Open Source Software

**Extramural Impacts**

- **Extramural Impacts**
  - Public Safety Analytics Open Framework
  - Indoor Localization Accuracy

## Reach

- **Hosted Events**
  - More than 80 stakeholder engagements since 2016
  - Laboratory visitors on-site and virtual
  - More than 2,100 visitors since 2016

- **Staff**
  - 71 NIST staff working on PSCR's mission

- **Publications**
  - 92 publications

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**NIST Public Safety Communications Research**

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EXTRAMURAL RESEARCH

GRANTS AND COOPERATIVE AGREEMENTS

- Over $86.3M in grants awarded to date
- Over 234 total award recipients, subcontractors & public safety practitioners
- 1 patent developed for Spectronn (a resilient systems award recipient)
- 3 patent applications submitted for location-based services award recipient

OPEN INNOVATION

- 18 challenges launched
- 30 states & 7 countries
- 207 teams
- 555 prizes awarded to date

OVER 20 PUBLICLY AVAILABLE OPEN SOURCE CODE INCIDENT MANAGEMENT FRAMEWORKS, INCLUDING VR ENVIRONMENTS & ANALYTICS FRAMEWORKS

WHICH WORDS BEST DESCRIBE PSCR’S ANNUAL STAKEHOLDER MEETING?

- Interesting
- Relevant
- Informative
- Virtual
- Insightful
- Innovative
- Collaborative
- Accessible

RESEARCH PUBLICATIONS

- 140 PSIAP Award recipient publications
- 121 professional journal/conference proceedings
- 19 other publications