The Public Safety Immersive Test Center

The Public Safety Immersive Test Center (PSITC) is a state-of-the-art facility designed and built in the spring of 2022 by the National Institute of Standards and Technology's (NIST) Public Safety Communications Research (PSCR) Division. The approximately 1,076 square feet center is located in the First Responder Network Authority's Technical Facility in Boulder, Colorado. The PSITC serves as a research and development facility for purposes related to user interface/user experience (UI/UX) and indoor location-based services (LBS) for PSCR researchers and innovators. NIST PSCR and the FirstNet Authority have been partnering agencies for a decade, focusing on furthering the development of public safety communications.

The PSITC is available to first responders and private and academic organizations [partnered with PSCR and the FirstNet Authority] that focus on public safety response. These organizations and individuals may visit the center to receive hands-on experience with the technology and conduct related research. The center will allow for researchers and first responders to leverage immersive virtual simulations and evaluate technologies that can support a variety of situations, such as a smoke-filled building, search and rescue scenarios, or even terrorist attacks. No controllers are required for the simulation to enable users to organically interact with and pick up props, touch walls, furniture, crawl on their hands and knees, and more.

The Facility Includes:

- A modular layout
- A variety of augmented & virtual reality headsets
- A motion capture system with 62 high-speed optical tracking cameras capable of centimeter accuracy
- 10 4k PTZ cameras with 2 microphone arrays for recording 8 simultaneous video streams
- A mobile staircase and other equipment for z-axis motion
- Physical furniture and gear to add a tactile component to simulations

Technological enhancements and updates to the PSITC will be made regularly, such as:

- Multiple sensory integration-haptics and olfaction
- Metrology for assessing enhanced user interfaces with virtual simulations
- 5G
- Mobile edge computing
- WebXR capabilities, which allow seamless deployment of virtual and augmented realities
- Other technological advances for public safety operations

For more information, visit the PSITC webpage on the NIST PSCR website where you can interact with the center in the Virtual Lab Tour and read recent press coverage. For any questions or inquiries regarding the PSITC, please contact NIST PSCR's LBS Portfolio Lead Joe Grasso at joseph.grasso@nist.gov or UI/UX Portfolio Lead Scott Ledgerwood at scott.ledgerwood@nist.gov.