National Urban Security Technology Laboratory

NUSTL
NATIONAL URBAN SECURITY TECHNOLOGY LABORATORY

Science and Technology

BACKGROUND

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) National Urban Security Technology Laboratory (NUSTL) provides Research, Development, Test & Evaluation (RDT&E) products and services to help state and local first responders and emergency managers prevent, protect against, respond to, and recover from homeland security threats and hazards.

NUSTL conducts critical Test and Evaluation (T&E) activities in support of the first responder community, DHS programs and components, and the broader Homeland Security Enterprise (HSE). This includes the development and review of test plans and protocols on emerging and commercial off-the-shelf technologies and tools and executing those test plans in both the laboratory and in the field.

MISSION

- Conduct independent T&E of emerging and commercially available technologies for first responders
- Execute research and development (R&D) in support of radiological and nuclear response and recovery
- Serve as trusted advisors for the first responder community and HSE

EXPERTISE

NUSTL requires dedicated resources to maintain modern capabilities and strategic investment in its infrastructure to support dynamic DHS and first responder missions.

NUSTL's infrastructure and subject matter experts serve the broader HSE by:

- Leading operational T&E with end-users and private industry manufacturers for both homeland security and first responder missions
- Providing a full range of T&E services, including test planning and execution, market research, focus group facilitation, data collection/analysis, technology demonstrations, and operational experimentations
- Enabling the transition and delivery of user-centered technologies and tools
- Supporting the operational integration and sustainment of technology into first responder operations
- Producing technical reports and other knowledge products to educate and inform technology acquisition and deployment decisions
- Bridging knowledge gaps between technology developers and first responder end-users
- Working closely with technology developers and end-users to validate technologies meet operator needs and requirements
- Supporting training and exercises with technology insertion and evaluation, as well as with subject matter expertise

IMPACT

With services addressing a diverse range of threats, hazards, and capabilities across the homeland security domain, NUSTL equips first responders with information to select and use key technologies and tools effectively in protecting our nation's cities. NUSTL's support ranges from tests of personal protective equipment for first responders and far more complex evaluations of unmanned aircraft systems (UAS) and their countermeasures, to providing actionable guidance and technology advice. The results of the lab's RDT&E activities help first responder agencies better prepare for and respond to homeland security challenges and threats, as well as inform their equipment acquisition and deployment decisions.

Contact Us: NUSTL@hq.dhs.gov

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TECHNOLOGY TEST & EVALUATION

CONSUMER REPORTS FOR FIRST RESPONDERS

Many of NUSTL's T&E activities are performed under the System Assessment and Validation for Emergency Responders (SAVER) program. SAVER activities culminate with knowledge products, which are used to inform technology and equipment procurement decisions. SAVER products are shared nationally with the responder community, providing a life and cost-saving value proposition to DHS, as well as to federal, state, local, and tribal responders.

More than 1,000 reports are published in the SAVER Document Library: www.dhs.gov/science-and-technology/saver.

COUNTERING THREATS FROM UAS

UAS pose significant challenges to air traffic safety and homeland security, as well as potential threats to border security, critical infrastructure and the general public. NUSTL has assessed the performance and suitability of Counter-UAS technologies across a variety of operational settings and end-user applications.

Current efforts include evaluating select products for their ability to detect, track, identify, and mitigate various UAS threats to better equip DHS components with technology options that work effectively in challenging urban environments. Beyond testing and evaluating Counter-UAS, NUSTL provides technical expertise and advice to agencies at the federal, state, local, and tribal levels regarding available technologies useful for countering malicious UAS.

URBAN OPERATIONAL EXPERIMENTATION

Building on the successes of past Urban OpEx events, NUSTL partnered with first responder agencies to test leading-edge technologies that address high priority capability gaps. The weeklong experiment showcased seven technologies including handheld sensors, UAS, AI-enabled gun detection, incident management and situational awareness platforms, deployable communications and deployable robotics. Developers gained valuable insights and feedback from end users to enhance the features, functions, and capabilities of their technologies for operational use.

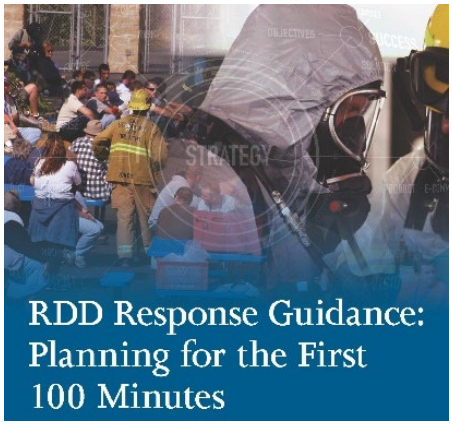
RAD/NUC RESPONSE AND RECOVERY

NUSTL's R&D program develops technical resources, tools, modeling, and guidance to help state and local agencies initiate a response in the first minutes and hours following a radiological/nuclear incident. The program works to improve radiological response capabilities at the local, state, and federal level.

R&D activities successfully transition capabilities to first responders and the federal response assets that support them to save lives, protect responders, and minimize impact to the community and economy.

RADIOLOGICAL RESPONSE GUIDANCE & ANIMATIONS

A radiological dispersal device (RDD), or "dirty bomb" detonation in a local jurisdiction will have significant consequences for public safety, responder health, and critical infrastructure operations.



NUSTL's animated videos of operationally-focused missions and tactics in the RDD Response Guidance: Planning for the First 100 Minutes help local responders and planners implement best practices and response activities during a radiological emergency.