

# Homemade Explosives Identification, Detection & Mitigation (HEID&M) Program



Homeland Security

Science and Technology

## HOMEMADE EXPLOSIVES – A PERSISTENT AND DYNAMIC THREAT

The [HEID&M Program's](#) role in combatting the threat posed by homemade explosives (HME) is to gather and prioritize requirements from stakeholders across the U.S. government, identify program performers, facilitate the synthesis of deployable solutions, and transition those solutions back to the stakeholders.

HEID&M's cross-cutting portfolio has four areas of focus:

- Rulemaking and certification
- Risk response and risk assessments
- Test and evaluation
- Training and training support

The HEID&M Program ensures that the explosives community has a clear understanding of HMEs, emerging threats, and actions necessary to improve detection technology, develop detection requirements, inhibit the unlawful use and manufacture of HMEs, and provide a solid foundation of agile and responsive solutions to counter the threat.

## UNDERSTANDING EMERGING THREATS

As homemade explosives are often created from common commercial items, it is a challenge to distinguish true HME threats from the many innocent gels and liquids in personal baggage or cargo. The HEID&M Program examines the chemical and physical properties of HMEs to support the development of new screening capabilities. The program performs explosive vulnerability assessments and develops decision support tools for checkpoint personnel and responders to help mitigate HME incidents and to respond more efficiently and safely.

## DEPLOYING DETECTION EQUIPMENT

The HEID&M Program has successfully provided information to update Transportation Security Administration (TSA) Detection Standards, which resulted in the deployment of equipment with enhanced detection algorithms. The program provides full threat weight data to the TSA on explosives of interest for vendor algorithm development and to improve the accuracy of transportation security equipment such as X-ray technologies and advanced imaging technology.



In partnership with S&T laboratories, the HEID&M Program's explosives characterization work provides manufacturers the ability to deploy advanced detection algorithms.

HEID&M program results have allowed TSA to develop and field more effective transportation security equipment, provide better training to front line personnel, and validate and monitor continuing and emerging threats. Additionally, the program provides and transitions products that are essential to the mission of other key DHS Components, including the Cybersecurity and Infrastructure Security Agency (CISA), United States Secret Service (USSS), and Customs and Border Protection (CBP). The tools, modeling, and risk mitigation projects the HEID&M program undertakes are technologies and knowledge products that protect national security and resiliency.

## PROGRAM PERFORMERS/PARTNERS

Customers, stakeholders and performers include:

- DHS Components: TSA, CISA, USSS
- Federal Bureau of Investigation
- Lawrence Livermore National Laboratory
- Los Alamos National Laboratory
- Naval Surface Warfare Center Indian Head Division
- DHS Transportation Security Laboratory, Tyndall Reactive Materials Group, and Detection Technology Center
- U.S. Army Combat Capabilities Development Command Chemical Biological Center
- Combatting Terrorism Technical Support Office
- U.S. Army Dugway Proving Ground
- Chemical Security Analysis Center
- RAND Corporation

