Science and Technology

INFRASTRUCTURE RESILIENCE & SECURITY

EXPLOSIVE THREAT MITIGATION UNIT

PORTABLE, COST-EFFECTIVE CONTAINMENT AND BLAST MITIGATION FOR SMALL EXPLOSIVE THREATS.

When security personnel identify a potential explosive device, they can use a steel box to contain it until the threat can be assessed and mitigated. However, steel boxes are bulky and heavy, which hinders the rapid and secure containment of potential explosives.

In response, researchers at the Department of Homeland Security Science and Technology Directorate Transportation Security Laboratory, Army Research Laboratory, and SURVICE Engineering Company developed the Threat Mitigation Unit (TMU). This innovation is a lightweight, rapid deployment device that can enclose suspicious items and contain potential detonation fragments to protect surrounding people and property. The TMU can be located at security checkpoints or in security personnel vehicles, ready to secure a suspicious item. Using the TMU, security personnel or first responders can confidently safeguard a potential explosive in less than 60 seconds. The TMU's small footprint (approx. 4 feet in width and length), manageable weight (less than 120 pounds), low cost, and low-profile design allow for easy adoption and implementation in existing security protocols.

KEY BENEFITS

+ Lightweight and low-profile design
+ Portable
+ Low cost
+ Rapid deployment
+ Seamless integration with existing security protocols

STAGE OF DEVELOPMENT

Proven System

PARTNERSHIP SOUGHT

License

INVENTORS

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DHS COMPONENT

Science and Technology Directorate

The Technology Transfer and Commercialization Branch (T2C) within the Office of Industry Partnerships (OIP) of the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) serves as the centralized point to manage technology transfer activities throughout DHS and the DHS laboratory network. **T2C@hq.dhs.gov**

THE TECHNOLOGY

The TMU was developed to contain the blast and fragments caused by the detonation of small explosive devices. It is enclosed within a Pelican case with seven latches and a door strap. To open the lid, a user unlatches all seven latches and pulls the door strap.
The suspect item is inserted into a foam slot inside a tube and covered with a box to cap the chamber. Once the cap is secured, the door slides back over the chamber, the Pelican case lid closes, and all latches clamp to contain the item. If the item inside the TMU detonates, the TMU minimizes the blast effect and keeps the resulting fragmentation contained, minimizing damage to personnel and property in its vicinity.

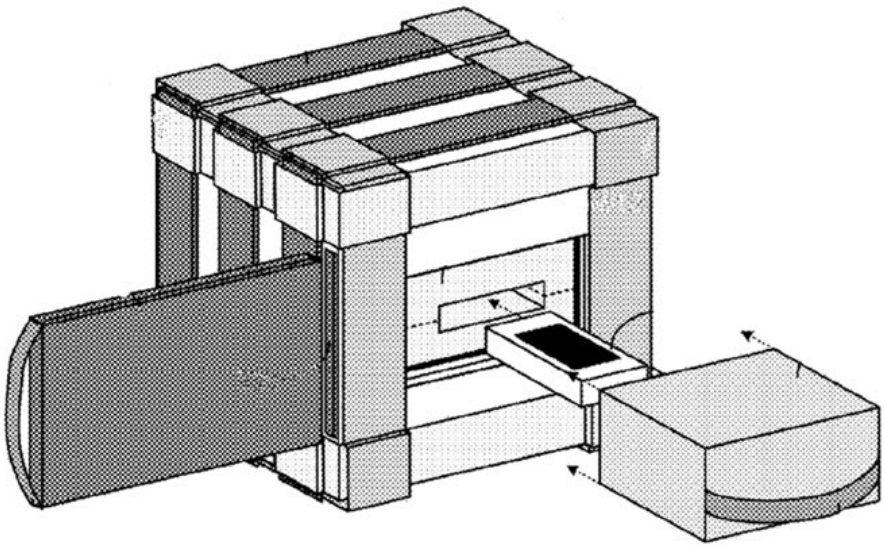

Diagram showing how a suspect item would be placed in the TMU.

TECHNOLOGY SOLUTION

APPLICATIONS

The technology has several potential end users:

+ **Airports**
+ **Public venues and buildings**
+ **Government or high-profile checkpoints**

PATENT INFORMATION

US Patent numbers 11,105,601 and 11,307,012

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FOR MORE INFORMATION ABOUT THE DHS TECHNOLOGY TRANSFER & COMMERCIALIZATION BRANCH:

https://www.dhs.gov/science-and-technology/technology-transfer-program