

# Improving Safety & Security by Simulating Human Behaviors during IED Attacks at Soft Targets & Crowded Places

## The Problem

Human behaviors during acts of mass violence are understudied and poorly understood. Deadly IED attacks at soft targets are rare. Practitioners and security experts have little real-world information on how to best prepare for such attacks.

## Unlimited Potential

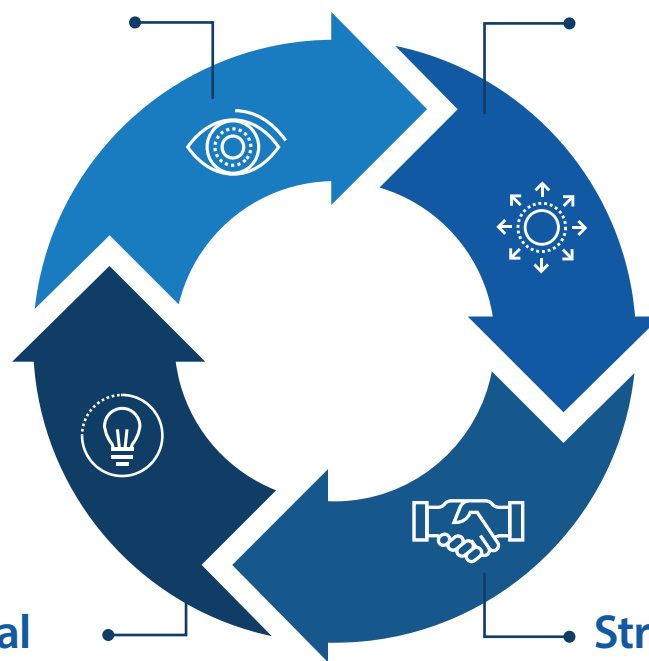
Agent-based models can simulate other forms of terrorism and targeted violence – such as active shooters and vehicle rammings – as well as the effectiveness of specific trainings and policies.

## The Solution

Agent-based modeling, an advanced computer simulation technique, provides venue specific information. The simulation results assist security and event managers in updating policies, procedures, and trainings to counter, mitigate, and respond to acts of terrorism and targeted violence.

## Strategic Partnerships

RTI International, DHS's Science and Technology Directorate, and CISA's Office for Bombing Prevention are partnering to develop and deploy the simulations. Local law enforcement and security partners support the modeling by providing access and insights to real-world venues and events.



### **All IEDs are not equal.**

Crowd responses differ based on the number, location, and size of the explosions. Response plans tailored to each scenario can save lives.

### **The blast site contains casualties – but also helpers, gawkers, and the shocked.**

First responders should be prepared to engage with a wide range of behaviors, not just the injured.

## **Evidence-based Insights: Modeling results that shape policy and training.**

### **Chokepoints kill.**

Crowds amassing at chokepoints are at higher risk of stampede injuries, crush events, and being targeted with other IEDs.

### **The indirect route can be faster.**

Panicked crowds flee to the well known exits. The fastest way to the injured, or to safety, is around or away from the masses.

### **Fear is contagious – but so is calm.**

Crowd behaviors spread panic, but can also reduce it. Effective evacuation policies will encourage calm.



## **Contact**

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