

# DHS Science and Technology Directorate

## Risk Prediction Program

### Improving targeting screening capability

Each year, approximately 400 million people, 123 million land vehicles and 9 million sea containers enter the United States. To prioritize who and what gets screened and how much screening is performed, U.S. Customs and Border Protection (CBP) deploys a family of Automated Targeting Systems (ATS) and analysts.

Currently, the Department of Homeland Security (DHS), Science & Technology (S&T) Directorate is collaborating with CBP to enhance their targeting capability through risk-based analytical tools that will increase CBP's targeting accuracy while simultaneously reducing the time required to make targeting decisions.

### Identifying threats prior to entry

The Risk Prediction Program incorporates innovative applications of behavioral and machine-learning sciences to develop software to directly address CBP's operational targeting and screening mission. The program is collaborating with CBP to develop two software products.

The first product is designed to automatically identify potential threats prior to their entering United States. This product augments CBP's existing rule-based ATS by adding a machine-learned-based approach designed to identify more complex, new and evolving patterns. When these two approaches were combined and tested on historical data, the results yielded an approximate 300 percent improvement in target accuracy.

The second product is designed to assist analysts in accurately and quickly adjudicating the risk recommendations provided from the ATS. This product replaces a largely manual search process across numerous databases with the capability to automatically identify specific travel characteristics of a person or entity. CBP uses the resulting information to determine the potential risk of that person or entity. Interim tests of the early versions of this product have yielded an approximate ten-fold reduction in time required to complete the analysis and adjudication process.

### Higher targeting accuracy in less time

The operational impact of the resulting products will



Risk Prediction Targeting Concept Diagram

include the following:

- An increased capability to identify and interdict threats prior to entering the United States.
- An increased capability to identify new threat patterns early in the evolution process.
- A decrease in the time required for analysts to complete targeting analysis and adjudication.

### Recent accomplishments to date

- Sea Cargo Anomaly Detection Software
- Air Passenger Anomaly Detection Software
- Air Passenger Threat Detection Software

### Upcoming milestones

- Land Passenger Anomaly Detection Software
- Land Passenger Threat Detection Software
- Integrated Cross Mode Threat Detection Software (Air, Land, and Sea)

### Risk Prediction Program Performers

The customer for the Risk Prediction Program is CBP. The performers for the Risk Prediction Program are:

- Metron, Inc., Reston, VA
- Naval Research Laboratory, Washington, D.C.



**Homeland Security**

Science and Technology

To learn more about the Risk Prediction Program, contact [sandt.rsd@hq.dhs.gov](mailto:sandt.rsd@hq.dhs.gov).