



AIRPORT RISK ASSESSMENT MODEL

Data-driven, risk-based decision analytics for resource allocation

With a user-friendly interface, ARAM quickly calculates the needs and best assignment of security assets—personnel, canines, and other countermeasures—that work together in innumerable combinations to keep travelers safe.



KEEPING AIR TRAVELERS SAFE

As millions travel through our nation's airports every day, diverse security assets combine to keep them safe. The Airport Risk Assessment (ARAM) can determine where and when to allocate those resources with the push of a button.

ARAM is an advanced risk modeling and assessment tool that helps airport security stakeholders prioritize resources based on evolving threats. Risk is quantified as a function of threat, vulnerability, and consequence at each area of a given airport. Overall airport risk is the sum of the risk at all these areas. From this, total risk can be calculated for the airport each hour and for an entire day. ARAM uses this risk assessment to dynamically recommend assignments for security countermeasures during the day.



TECHNOLOGY FEATURES

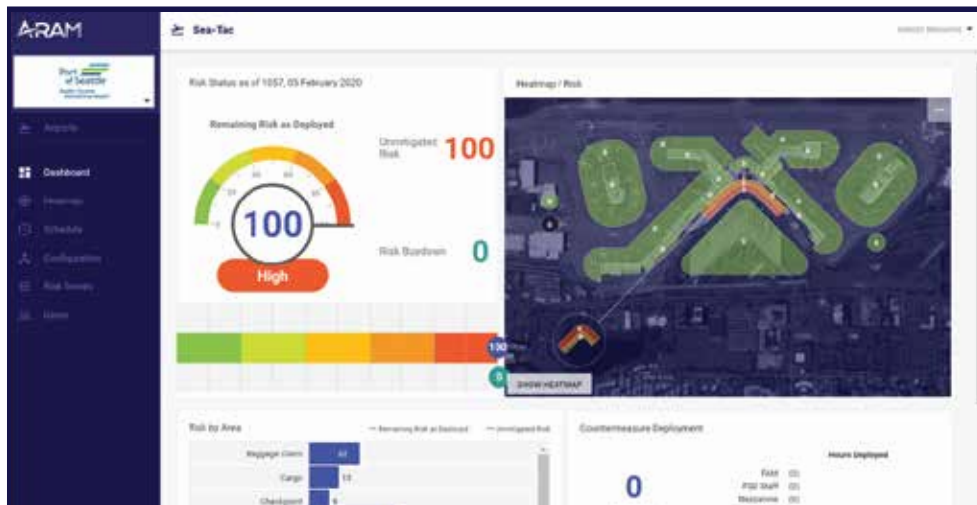
- ▶ Automatically quantifies the risk and allocates resources
- ▶ Minimizes vulnerabilities and maximizes security and cost savings
- ▶ Accomplished by a simple click of a button
- ▶ Threat information, and resource availability
- ▶ Seamlessly integrates different sources, such as flight schedules and passenger and airport volume
- ▶ Easy to use, web-based tool and visualizations to recommend where to best deploy security assets on an hourly basis

RESULTS A CLICK AWAY

Developed at Pacific Northwest National Laboratory (PNNL), ARAM represents the next-generation in intel-driven risk-assessment and resource modeling to assess and quantify terrorism and other security risks at airports. It uses rigorous mathematical techniques.

With a user-friendly interface accessible via a mobile device, ARAM quickly calculates the needs and best assignment of security assets—

personnel, canines, and other countermeasures—that work together in innumerable combinations to keep passengers and the airport safe and secure. ARAM also randomizes a percentage of the assignments, which increases deterrence and prevents an adversary from predicting countermeasures.



ARAM offers an intuitive, web-based interface for users to easily visualize and navigate security resource allocation recommendations.

CUSTOMIZABLE BY USE

Licensees can personalize ARAM to determine security resource allocations at their facility. ARAM ingests and automatically integrates different data sources, such as flight schedules and passenger and airport volume, along with intelligence data, threat information, and resource availability.

The web-based tool then recommends where to best deploy security assets on an hourly basis—a capability unmatched by other resource allocation tools.

The technology was built on expert input and intel to quantify the risk of terrorism and optimize the distribution of security assets throughout the airport in response. The tool is mathematically rigorous but user-friendly, enabling security personnel to work more efficiently with the resources they have.

BENEFITS MULTIPLE INDUSTRIES

ARAM has applicability at any airport and already has included the nation's top 100 airports. It can be extended to other transportation venues, as well. The tool builds on a risk assessment model initially developed for a ferry transportation system.

Funded by the Department of Homeland Security and in partnership with the Transportation Security Administration, PNNL piloted ARAM at the Seattle-Tacoma International Airport, which serves 49 million travelers annually. User feedback has driven usability improvements in the tool. ARAM is available for licensing in all fields of use.

LET'S CONNECT

If you have questions, regarding this technology, please send inquiries to commercialization@pnnl.gov. You can view all PNNL technologies available for licensing at www.pnnl.gov/available-technologies.