

News and Events

NEWS

EVENTS

PRESS ROOM

MEDIA GALLERY

INNOVATOR
PROFILES

EXPERTS DIRECTORY

Our Top Story

New Startup Formed to Commercialize Patented USC Technology that uses Game Theory to Intelligently Randomize Security Patrols for Safer Airports, Borders, Municipalities and Waterways

March 14, 2013

By USC Stevens

FOR IMMEDIATE RELEASE

Media Contact: Ian Murphy
310.689.6397; ianmurph@usc.edu

Thursday, March 14, 2013 – Los Angeles, CA The USC Stevens Center for Innovation, a university-wide resource that helps USC innovators make impact with their ideas, announced today that ARMORWAY Inc., has been issued an exclusive license to commercialize software that provides intelligently randomized security patrols for resource optimization of security agencies in order to make airports, municipalities, borders and waterways all over the world more secure.

"Protecting ports, airports and critical national infrastructure and interrupting the illegal flow of weapons and contraband is a 24 hour-a-day mission, yet limited security resources prevent full security coverage at all times, allowing adversaries to observe and exploit patterns in selective patrolling or monitoring," explains Erroll Southers, Co-Founder of ARMORWAY and Associate Director of the National Homeland Security Center for Risk and Economic Analysis of Terrorism Events (CREATE). "This technology results in greater cost-benefit opportunities for security resources by maximizing deployment and scheduling efficiencies." ARMOR software was developed at USCCREATE, a National Center of Excellence funded by the Department of Homeland Security and housed within the USC Price School of Public Policy and USC Viterbi School of Engineering.

ARMORWAY will be the first commercially available security system to incorporate game theory. The patented technology deploys limited security resources by allowing for distinct weights to different offensive and defensive actions based on their complex costs and benefits. ARMORWAY products are based on the work of Milind Tambe, who is the Helen N and Emmett H Jones Professor of Computer Science at the Viterbi School of Engineering and a researcher with CREATE.

Tambe's research is rooted in mathematical game theory, which predicts how conflict might play out between adversaries. According to [Bayesian Stackelberg](#) game theory, the attackers observe the defenders to identify and exploit any possible security patterns. ARMOR's rigorous game-theoretic modeling and algorithms prevent that from happening.

"ARMOR's randomization optimizes the use of the limited security patrols by making it

extremely difficult for would-be attackers to determine when a particular target will be protected, states Tambe, who is also a Co-Founder and serves on the Board of Directors for ARMORWAY. "Intelligent randomization, a core feature, means that the program's recommended patrol schedules ensure that high value locations are visited most often."

In 2007, Tambe and his team implemented ARMOR, a randomized scheduling of police checkpoints for the six inbound roads to LAX. The project's success led to the creation of the ARMOR-IRIS software system to randomize schedules for the Federal Air Marshalls. The Transportation Security Administration has also deployed a Tambe-created system of intelligently randomized airport patrols, ARMOR-GUARDS at an unidentified airport. Tambe and his team then worked with the U.S. Coast Guard in April 2011 on deploying ARMOR-PROTECT to randomize the patrols of Boston Harbor and the Ports of New York and New Jersey in 2012. Those successes led the U.S. Coast Guard to deploy ARMOR-PROTECT on February 1, 2013 at the ports of Los Angeles and Long Beach (POLA/LB) to make the local waterways safer.

Most recently, the Los Angeles County Sheriff and the L.A. Metro system implemented ARMOR-TRUSTS to randomize police transit patrols to thwart fare evasion. Initial results show that, as a result, deputies have nabbed an increasing number of fare jumpers. This system will soon be expanded to deter other forms of crime and terrorism.

"Because this technology has been vetted by large security agencies and comes from peer reviewed and patented research we feel there is tremendous global commercial potential but

...and the patent research that there is tremendous great commercial potential but also tremendous potential to any agency that uses the software to save significant amounts of money," explains ARMORWAY CEO Zareh Baghdasarian. "We are already in discussions with several other organizations worldwide and expect many more such conversations in the future as resources continue to diminish while standards for safety can not."

ARMORWAY is a USC spinout that formed as a result of two important programs at USC Stevens: [The Entrepreneurs in Residence Program](#) that brings successful entrepreneurs to campus to catalyze the formation of high-growth startup companies based upon university technologies and the [Ideas Empowered Program](#) that bridges the gap between basic research and the marketplace by supporting both the idea and the innovator through mentoring and coaching, connections to resources, and proof-of-concept funding of typically \$50K-\$150K for validation of technical feasibility through proof-of-concept experiments and prototype development.

Media Contact: Ian Murphy - (310) 689-6397, ianmurph@usc.edu

About ARMORWAY Inc.

ARMORWAY develops software products, systems, and services for optimization of security resource allocation by utilizing intelligent randomization algorithms to maximize the effectiveness of critical security resources to mitigate risk and decrease resource intensity. For more information please visit <http://armorway.com>

About the USC Stevens Center for Innovation

The USC Stevens Center for Innovation is a university-wide resource in the Office of the Provost at the University of Southern California that helps identify, nurture, protect, and transfer to the market the most exciting innovations from USC. It also provides a central connection for industry seeking cutting-edge innovations in which to invest. As part of this role, the USC Stevens Center manages the university's intellectual property portfolio stemming from its approximately \$650 million annual research program. Furthermore, the USC Stevens Center develops the innovator as well as innovations, through educational programs, community-building events and showcase opportunities. For more information please visit <http://stevens.usc.edu>

About USC CREATE

Established in 2004, CREATE is an independent, interdisciplinary national research center based at the University of Southern California, jointly in the Viterbi School of Engineering and the Price School of Public Policy. CREATE is funded by the U.S. Department of Homeland Security. CREATE's mission is to improve our nation's security through the development of advanced models and tools for the evaluation of the risks, costs and consequences of terrorism and to guide economically viable investments in homeland security.

www.usc.edu/create



[MORE NEWSBITES>>](#)

[Share this story on Facebook](#)

[Site Map](#) | [Privacy](#) | [Careers](#) | [Press](#) | [Contact Us](#) | [Home](#)

