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## Annenberg TV News

### USC-Developed Software Protects Ports from Terrorism

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Software now used at ports in Los Angeles, Long Beach, New York and Boston makes it almost impossible for would-be attackers to determine a target.

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By Lillian Ma and Taiu Kunimoto

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A USC-designed computer software system has been installed at the ports of Los Angeles and Long Beach protect the area's harbors against terrorism attacks, the university announced today.

The anti-terrorism system, called Port Resilience Operational/Tactical Enforcement to Combat Terrorism system (ARMOR-PROTECT), was created by USC computer scientist Milind Tambe. Tambe said development of the software relied on multiple USC graduate and post-doctoral students.

The application was deployed on February 1 at the ports, whose busy shipping lanes make them the eighth busiest port in the world.

The system uses a complex algorithm to scatter the U.S. Coast Guard's boat patrol schedules, all in an effort to achieve maximum port security and make it almost impossible for the attackers to determine a particular target.

"The goal is to make patrol patterns unpredictable for an enemy that is trying to conduct surveillance to plan an attack and yet simultaneously ensure that patrol time is used effectively to ensure maximum protection of high-value targets in the port," Tambe said.

"We don't have the resources to be everywhere, all of the time," he said.

High-value locations such as bridges, ferry terminals and crowded piers are programmed to be patrolled more frequently.

ARMOR-PROTECT was funded by the National Center for Risk and Economics Analysis of Terrorism Events (CREATE) through a contract from the U.S. Coast Guard Research and Development Center. Tambe and his colleagues recently formed a start-up, **Armorway**, to develop software that utilizes game theory to maximize operational efficiency.

The Coast Guard began using ARMOR-PROTECT system in Boston in 2011. New York followed suit and implemented the security system in early 2012. In Singapore, one of Lambe's former students is using the software to enhance the security of the train system. Lambe said he hopes to expand the software's international usage.

The Coast Guard is currently evaluating the software with the hope of eventually using it throughout the nation, said Craig Baldwin, the Coast Guard's program manager for ARMOR-PROTECT. The United States currently has 361 ports.

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*The anti-terrorism software used at the ports of Long Beach and Los Angeles was developed by USC computer scientist Milind Tambe. (U.S. Coast Guard)*