USC SECURITY APPLICATION MARSHALS

Success of Viterbi School's "keep the bad guys guessing" program at LAX leads to new partnership

ERIC MANKIN
October 01, 2008 — Representatives from the Federal Air Marshals Service (FAMS) visited USC September 29 to explore how the ARMOR system created by Department of Computer Science researchers could be integrated into its operations, with tests possible early next year.

The delegation of three FAMS analysts spent the day with CS Professor Milind Tambe, post-doctoral research associate Chris Kiekintveld, and graduate students Shyamsunder Rathi and Jason Tsai, receiving a complete introduction to the program funded by the Department of Homeland Security USC-based National Center for Risk and Economic Analysis of Terrorism Events. (CREATE).

Random Thinkers: (from left) Milind Tambe (USC), Mark Kukulich (FAMS), Harry Weimer (FAMS), Chris Kiekintveld (USC), James Curren (FAMS), Shymansunder Rathi (USC), Jason Tsai (USC)

ARMOR is a computer program that applies game theory insights to systematically make it extremely difficult for observers to find any patterns or regularities in scheduled operations of (for example) law enforcement patrols, while stil maintaining the same level of police presence.

"The FAMs team appreciated our demonstration, provided nice positive feedback on our game theoretic approach to randomization for FAM scheduling, and provided pointers for further improvement in our system," said Tambe. "We hope to hand over the first version of our system for initial testing to them by December 2008."

ARMOR has been in use at Los Angeles International Airport security operations for one year, first on an experimental basis, then adopted operationally. (See earlier Viterbi news story about its operation), and has subsequently been studied by other law enforcment agencies.

A statement by the Federal Marshal's Service Press office discussed the reason for the visit:

"FAMS employs an intelligence driven and risk based approach to protect commercial air travelers. A key feature of the FAMS strategy includes incorporating an element of randomness/unpredictability to mission deployments. FAMS is currently working in partnership with the Department of Homeland Security's Under Secretary for Science and Technology and USC CREATE to analyze and design a next generation scheduling system capable of employing the latest technology, intelligence and deployment strategies. Ultimately, the system currently under development will further enhance the current methods used to deploy air marshals where they are needed most, when they are needed most."

CREATE Managing Director Detlof von Winterfeld hailed the collaboration. "With continued interest from various government agencies, ARMOR has found yet another application in the Federal Air Marshals program," he said. "ARMOR is a versatile technology of smart randomization that has the capability to enhance a multitude of security programs and an excellent example of CREATE's research contributing to the larger effort of protecting our nation."

Viterbi School ISE Department Associate Professor Fernando Ordoñez, who worked with Tambe in building the system, was unable to attend the September 29 meeting because he was in Chile participating in the inauguration of a new security center there which will also use the technology.