Counter-Insurgency Software Goes Stateside

Military software is being shared with domestic law enforcement to refine the tool for the Department of Defense, while helping police gang units in the meantime.

BY COLIN WOOD (HTTP://WWW.GOVTECH.COM/AUTHORS/COLIN-WOOD.HTML) / JULY 24, 2013

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The military is working with local law enforcement to develop software that will help track gang networks.

Software now known as the Organizational, Relationship and Contact Analyzer (ORCA) was initially developed and used in military operations to identify networks of insurgents, and is now being used domestically. The military will use the domestic tests as a way to hone the software for future wartime applications, while in the meantime providing police gang units with a valuable free tool that could eventually see a more widespread deployment.

Paulo Shakarian, teacher at the U.S. Military Academy at West Point and primary investigator on the project, said that he and a group of students are now working with a major metropolitan police department in the U.S. that reached out to them for help with their city's gang problem.

Shakarian, who served two tours in operation Iraqi Freedom, said that while deployed he compared notes with some police officers and learned a lot from their perspectives. And since then, he said, working with law enforcement on this software has continued to illuminate the overlap between military and domestic law enforcement operations, so it made sense to cooperate in the development of ORCA. "I thought it was pretty interesting that there are actually quite a few similarities between their gang violence problem and the types of counter-insurgency issues we face in the military," he said.

The research behind ORCA is exploratory and doesn't involve the use of classified data, and as such, Shakarian said, West Point has the ability to work relatively freely with police. Once the software is more polished, he said, they may deploy it beyond their initial test bed. There has been a lot of interest from law enforcement agencies around the country, he added.

This project, Shakarian said, helps the Department of Defense get a more polished product, and it helps police by giving them a free tool. And it helps their students. "Here at West Point we also have a major goal of education and training of our cadets who are future officers in the U.S. Army. So this project, we're working toward both those ends."

And just as enterprises and local government offices are trying to figure out how to make their data work for them, the military is doing the same thing, he said. "In the last two wars in Iraq and Afghanistan, for the first time ever in military history have we collected so much data," he said. "Never has data been collected so nicely at such a high resolution. … How do you go about analyzing it?"

ORCA analyzes the data collected to show law enforcement the relationships between various people and organizations. There are more than 1.4 million gang members in the U.S. today, according to the FBI. Making sense of how influential given members are and how gangs are organized is valuable intelligence for gang units trying to contain such crimes.

John P. Sullivan, a lieutenant with the Los Angeles County Sheriff's department was among the law enforcement personnel who reached out to Shakarian after hearing about the software. L.A. County is not the department working to help develop ORCA, but any software tool that can help their officers work smarter on the streets would be useful and they'd like to try it, Sullivan said. Los Angeles' gang violence is not as out of control as it once was, but there are still about 30,000 gang members and up to 150,000 individuals in the county who could be considered part of "that cultural milieu," he said.

Software like ORCA is useful, he said, because law enforcement has limited resources. "It allows us to better understand organized criminal enterprises and gangs, understand their leadership structure, understand how they're linked to other criminal enterprises," he said. "Which gives us the ability to target enforcement, prioritize enforcement. It would allow us to be more effective in understanding an organization so we know where the organization's center of gravity is, we'd know where the links are, we'd know where the emerging and evolving threats are coming from."

Sullivan's interest in high-tech software tools didn't begin with ORCA. His department is also looking at using software that leverages game theory to achieve many of the same goals as ORCA. His department wants to know that their actions are having the kind of impact they think they're having, he said. In a test conducted with the help of a research group at the University of Southern California, the department demonstrated (http://teamcore.usc.edu/projects/TRUSTS/) that using game theory makes their officers more agile and more efficient, Sullivan said.
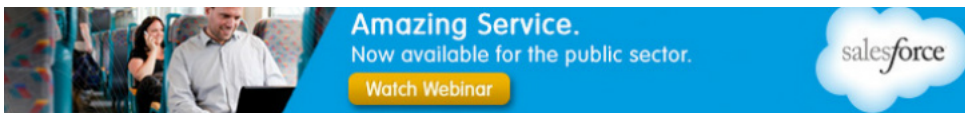
These software tools do something they can already do by hand or with several complex pieces of software, Sullivan said. What analytics software does, he said, is allow for faster, easier and more accurate data analysis. Data analyzed with smart software can provide a more refined view, he said – a connection between two criminal organizations can now be weighted, proving deeper insight into the whole social network. The ability to do social network analysis in real-time, or to predict the future, he said, pushes the data closer to the decision maker, which is very valuable, especially in the field.

"When you have lots of things happening in a very complex, chaotic environment, it becomes hard for individuals to do that [analysis]," he said. "So the way we usually do it is create smaller areas, create more leaders, but then interaction between them is minimized. What we're trying to do here is use the technology to allow us to be faster." Technology will not replace people as decision makers any time soon, he said, but a tool that gives each individual rich data in real-time allows for everyone to make better-informed decisions and there's less lost communication.

"There's a lot of people looking to develop ways to aid decisions, to understand criminal enterprise," Sullivan said. Gangs and organized crime can probably never be eliminated, he said, but through better enforcement, dedicated gang units, and the use of better intelligence, law enforcement can contain and minimize the negative impact gangs have on communities.

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