

**‘A crystal ball, it’s not’**

## **JFCOM READYING PLAN TO SEND ‘ANTICIPATORY ANALYSIS’ TOOL TO THEATER**

Date: November 2, 2006

U.S. Joint Forces Command is readying a proposal to send a modeling and simulation system to cities in the Middle East that may help commanders anticipate the effects of their decisions on urban populations, according to JFCOM officials.

“We are in the process of framing opportunities for taking [the Synthetic Environments for Analysis and Simulation system] into the real world with both U.S. operating forces and also with some of our allies,” David Ozolek, executive director of the command’s Joint Futures Laboratory, told reporters during an Oct. 27 teleconference.

Originally created by researchers at Purdue University, the system is designed to model the behavior of individuals and whole populations.

JFCOM officials based their decision to begin crafting a proposal to deliver prototypes of the system on findings from the command’s “Urban Resolve 2015” experiment, which ended last week, Ozolek said.

During the experiment, SEAS was used to create an interactive 2015 Baghdad, giving experimenters an ability to anticipate the possible effects of their actions and those of other actors -- for example, political leaders, insurgents and criminals -- on specific populations in the city, he said.

Urban Resolve is JFCOM’s main warfighting experiment that looks at conducting operations in urban environments. Computer simulations are used to create a virtual environment of buildings, roads and civilians so participants can test new ideas and procedures.

Urban Resolve 2015 was divided into three segments: The first, in August, focused on battlespace awareness, the second, in September, concentrated on maintaining persistent situational awareness and the last, which wrapped up Oct. 26, highlighted command and control issues (*Inside the Pentagon*, Sept. 28, p1).

“Historically, we have looked at the urban environment as a problem of complex terrain,” Ozolek said. “It really is a problem of complex systems and the most complex of those systems is the population.”

In the past, military doctrine had cautioned against operating in cities because urban environments are complicated by civilian activity and extensive infrastructure. But as populations continue to move into

urban areas, avoidance is no longer a practical policy, many military officials say.

During the September and October Urban Resolve segments, SEAS offered joint task force commanders the ability to get an approximation of the potential outcomes or implications of a particular course of action, Ozolek said.

SEAS consists of “human behavior models” that enable individual entities in the simulation to influence and be influenced by other individuals and the media, as well as public opinion on global, regional, national, city, and neighborhood scales, according to a fact sheet from Simulex, the company that helped developed the technology.

Because the SEAS system “performed as an anticipatory analysis tool much better than we expected . . . we want to get that into the field for field validation as quickly as we can,” Ozolek said.

The SEAS model allows commanders to feed in campaign plans -- whether the actions are primarily military, political, economic or social in nature; infrastructure- or information-related; or a mix of all those aspects -- into a computer to get a “nice bell curve” of possibilities, he said.

“We will load into this analytical environment the dimensions of a course of action and we will run dozens to hundreds of iterations,” Ozolek said. “And instead of attempting to get a single solid prediction of the future -- what [SEAS] tells us is the range of implications.”

The analysis tool will not predict a right course of action or tell commanders which effect is inevitable, but it may help military leaders understand the best and the worst possible outcomes of their actions, he added.

“But perhaps most importantly what it will show [the commander] in the middle of the curve is the most likely implications that will come” from his actions, Ozolek said.

If fielded to cities in Iraq and Afghanistan, the program is envisioned as a means of helping commanders assess the “potential risks and potential advantages” of their actions, he said. SEAS may act as a decision support tool that could help leaders go beyond “military kinetic capabilities,” he added.

JFCOM leaders and members of the senior advisory group on urban operations were briefed on Urban Resolve 2015 and SEAS on Oct. 27, according to Ozolek.

The Joint Futures Laboratory director said there was a noticeable difference between the quality of decisions made by commanders during the first segment of Urban Resolve, when they did not use SEAS, and the later two iterations, in which they did.

For example, during the first segment, when commanders were asked to stop a “spoiler” -- or someone like a criminal, radical leader or militia commander who was creating instability in a particular neighborhood -- many of the suggestions were purely military in nature.

“In the August trial, the courses of actions that we would typically see described would be: ‘We could drop a 500-pound bomb on them, [or] we could send out a sniper team, [or] we could conduct a raid,’” Ozolek said.

Toward the end of the experiment, the joint task force commanders had risen to a “new level of sophistication” in decision-making, he added.

Commanders began “talking about what economic things could we do to make this destabilizing threat irrelevant? What information actions could we take to discredit him?” Ozolek said.

Joint task force commanders moved from “classical military kinetic solutions to a real, integrated, interagency, effect-based approach,” he added.

Besides preparing prototypes that could be shipped overseas, JFCOM officials also are working on sending SEAS to international partners to help learn more about the system’s capabilities, as well as to get an independent assessment on the technology, Ozolek said.

Some of the more than 10 countries that took part in Urban Resolve 2015 already have requested SEAS, he added.

JFCOM first used SEAS in 2004, Jim Blank, the modeling and simulation chief at the command’s joint experimentation directorate, told *ITP* last month.

Originally, the tool was meant to help develop business strategies, but its use expanded over time. The Army, for instance, has used SEAS to model the U.S. population for recruiting purposes, according to Blank.

There still is a “great deal of work” to be done to improve the technology, Blank said.

The accuracy of the system depends on the reliability of the information it uses, Blank said.

“A crystal ball, it’s not,” he said. “Garbage in, garbage out.”

Linking the system to real-world databases and information outlets will be required to bring more validity to the outcomes generated for commanders, Blank said.

Officials also will have to include information that captures the perspective of more decision-makers in an area of operation, he said.

“Insurgents also have a vote” in SEAS, Blank said. “How do you think like them?” -- *Rati Bishnoi*

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PENTAGON-22-44-3