

Military deploys virtual reality to train soldiers, staff

November 11 2010, By W.J. Hennigan

Seated in a tan leather couch, Petty Officer Sarax suddenly straightens his back and begins flailing his right arm.

"She doesn't know what I've been through," Sarax, who just returned from Iraq, says when asked about his marriage. "There are things that I just don't want to talk about with her. And she keeps pushing."

He talks and behaves like a soldier overcome by combat trauma, but Sarax isn't real. He is a software program, a life-size projection on a movie screen that is reacting and responding to questions from a psychologist being trained to treat [post-traumatic stress disorder](#).

Sarax is a virtual patient, one of many computer-simulated humans created by artists, engineers and scientists at the University of Southern California's Institute for Creative Technologies. By the end of the year, the virtual patient is expected to be in use in university classrooms, and eventually in clinical hospitals and military bases.

[Interactive computer](#) patients are just one of many cutting-edge virtual technologies being developed at the institute. Many of them are used as training tools for U.S. military personnel, from fighting insurgents to calming nerves of combat-weary soldiers.

The institute's wide-ranging virtual technologies, now found on 65 military sites across the country, have popped in and out of the public spotlight, but they're on full display now that the institute has opened the

doors to its new 72,000-square-foot facility in Playa Vista, Calif.

"The move is a mark of a new era for us," said Randall W. Hill Jr., executive director of the institute, which outgrew its facility in Marina del Rey, Calif. "But really, it's a new era for the Army as well."

The institute's funding has increased from \$5 million in 1999 to about \$30 million today - as the Pentagon has stepped up spending on training military personnel through simulations. It has also attracted a diverse staff of more than 180 professionals, from graphic designers to psychologists.

"Five years ago, the characters were talking heads with computer-generated voices with no emotion," said Patrick G. Kenny, who leads the [virtual patient](#) program. "Today, it's getting harder to distinguish what is real from what is not with virtual human characters."

Walking through the institute's new Playa Vista offices is like walking through a fraternity house for high-tech geeks. Cubicles have white boards on which workers can quickly jot down ideas whenever they have an "aha" moment. And a corner office is more likely to be occupied by a twentysomething in a T-shirt huddled over a computer monitor than a supervisor in a suit.

On a recent visit, the institute engineers were testing one of their latest first-person, multi-player games that allows players to take part in a simulated attack that includes dealing with an improvised explosive device. The game is designed to prepare soldiers for an insurgent ambush. It is already found on three military bases, including Camp Pendleton, in northern San Diego County.

In the training simulation, soldiers sit in mock Humvees and slowly roll through towns in either Iraq or Afghanistan, which are aesthetically true

to life because the institute used satellite photographs to design the town's landscape.

"We try to make it as real as possible," said Todd Richmond, the game's project director.

Richmond said he knew the institute got the game right after one of its players, a Marine who had been deployed overseas, pointed to a shop by the side of the road, saying, "Hey, I went in that place and bought a Coke."

In addition to mapping and satellite reconnaissance, the institute uses Hollywood movie writers to come in and make the story lines more compelling. The institute is one of the country's only organizations that draws on the entertainment industry to do such work.

Maintaining this kind of realism is key to the institute's success, said Peter W. Singer, author of "Wired for War," a book that examines robotic warfare. "The stuff that (the institute) does is really in a class of its own."

Singer estimates the U.S. [military](#) is spending about \$6 billion each year on virtual training and expects that number to rise.

"This is a medium the iPhone generation knows," Singer said. "You can't simply teach them on a chalkboard anymore."

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