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Video Game Vest Simulates Sensation of Being Capped

Video game maker TN Games delivers a vest filled with sensors that promises to give fans a more authentic experience

By Larry Greenemeier | October 25, 2007

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First-person shooter video games have become immensely popular because of their ability to let players mercilessly mow down digital foes from the comfort of an easy chair. When a new breed of video game technology hits the market next month, the machines will have their day as their flesh and blood opponents gain the ability to feel the impact of bullets, explosions and other



PUNISH, NOT PROTECT: The 3rdSpace Vest developed by TN Games looks like a bullet-proof flak jacket but, rather than block bullets, it is instead designed to simulate the feeling of being shot.

Image: Courtesy of TN Games

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blows by donning a specially designed vest rigged with pneumatic actuators and microcompressors.

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The 3rdSpace Vest developed by Redmond, Wash.-based TN Games looks like the

bulletproof flak jackets worn by police officers. Rather than block bullets, however, the vest is designed to simulate the feeling of being shot. Each features eight impact points—four in the front and four in the back—that use a system of pneumatic actuators and microcompressors to deliver a blow of 30 pounds per square inch, or psi (2.1 kilograms per square centimeter).

The force of the sensors embedded in the vests "is enough to make a game fun and interesting, but it's not going to hurt people," says Mark Ombrellaro, a vascular surgeon who formed TN Games and its parent company, TouchNetworks, Inc.

The vest is set to debut on November 21 with TN Games's futuristic 3rd Space Incursion game and will also work with a version of Activision's World War II era-based Call of Duty 2, which ships with the vest. TN Games has also developed software modules for gamers to download that will enable versions of Id Software, Inc.'s Quake and Doom games to work with the vest.

Ironically, the idea for a vest designed to heighten the experience of video games simulating violence evolved from a telemedicine project conducted in Texas prisons. In 1993 Ombrellaro participated as a physician in the Texas Department of Criminal Justice's Mednet video consultation pilot project, which offered inmates medical exams using videoconferencing technology, negating the need for physicians to be in the same rooms as their patients. The program was the result of efforts to save costs and decrease the security risks of sending doctors into prisons.

The inmates, who could be as far as 168 miles (270 kilometers) away, saw their doctors via a monitor set up at the prison. The remote physicians would instruct an on-site nurse on how to conduct the physical examination and rely on that nurse's observations to make a diagnosis. "With anything complicated, [the nurses] would say that they couldn't really tell or that the [inmate] would need more tests," Ombrellaro says.

With this experience in mind, Ombrellaro set out to create a device that could improve the accuracy of exams conducted remotely via telemedicine channels. In 2000 he formed TouchNetworks to develop what he saw as a "wearable network." The idea was to give physicians special hand control units that they could use to

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remotely activate sensors on the patient's vest, which would cover the body from the pubic bone up to the shoulders.

But the vests had to provide physicians with more than just the ability to inflate a small section to see if that caused pain or discomfort in a particular area of the patient's body. "You need to be able to figure out how much force to deliver and how much displacement that force is causing in the body," Ombrellaro says. "Beyond that, your fingertips tell your brain what they're feeling when they push, so you need to have not just a lever in the device but a receptor as well."

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