

Welcome...

...to the nation's first demonstration of "tele-training" in emergency/trauma medicine, based on the fusion of virtual reality and Internet2™ networks.

The Medical Simulation and Modeling Research Laboratory, a branch of the Emergency Medicine Research Laboratories at the University of Michigan, developed the Medical Readiness Trainer (MRT®), which will serve as the principal platform of today's demonstration.

Three advanced technologies have been brought together to transmit a virtual reality (VR)-based emergency medical tele-training exercise of advanced life-support training by:

- Utilizing the University of Michigan MRT® simulation in Ann Arbor, Michigan
- Transmitting the live event over the high-performance Internet2 networks
- Projecting the stereo-video conference in Norfolk, Virginia, with Ethereal Technologies' four-dimensional Volumetric Imaging System (VIS^{4D}).

Today's Event

The demonstration is a tele-training session dealing with the treatment of life-threatening medical emergencies. You are among the select audience of observers at both Old Dominion University in Norfolk, Virginia, and at the headquarters of the National

Center for Manufacturing Sciences (NCMS) in Ann Arbor, Michigan.

The medical emergency is being re-created using a Human Patient Simulator (HPS) located at the University of Michigan's Department of Emergency Medicine in Ann Arbor, Michigan. Ethereal Technologies' VIS^{4D} workstation provides the VR technology.

This demonstration offers a "first ever" opportunity to assess the benefits of stereoscopy to generate three-dimensional images in the context of medical training. It takes full advantage of the high-performance Internet capabilities of the Internet2 Abilene network to support real-time digital video and HPS control information.

Today's event is made possible through the efforts of the following hosts and sponsors:

- Virginia Modeling, Analysis and Simulation Center, an Enterprise Center of Old Dominion University's College of Engineering and Technology
- National Center for Manufacturing Sciences
- Ethereal Technologies
- University of Michigan
- Internet2

Emergency/
Trauma Medicine
Tele-training
Demonstration
January 13, 2000

What is the Medical Readiness Trainer?

The MRT[®] is an ultra-modern platform for comprehensive medical training at all proficiency levels. The MRT[®] combines HPSs, state-of-the-art telecommunications and fully immersive VR into an integrated unit that leverages all advantages of these leading-edge technologies. The combination of clinical and environmental realism that the MRT[®] offers creates a hyper-rich training envelope that immerses trainees in a high-fidelity recreation of the real-life world of clinical medicine and its adrenaline-discharging challenges.

What is VIS^{4D}?

Today's demonstration is just one example of the many ways to use the family of visualization technologies collectively known as VIS^{4D}. Existing stereoscopic, auto-stereoscopic and VR "stereo" display systems only simulate three-dimensional images. Most applications that create and manipulate three-dimensional data display the final output using two-dimensional devices to project the output onto a flat screen or print/plot it as a perspective drawing.

Ethereal Technologies has developed the first true, real-time (the fourth dimension), volumetric imaging system—VIS^{4D}. When this system is used with PCs, flat panel displays or high-end workstations, people can view and interact with a "floating" hologram-like image in real time, without the use of special peripheral devices. For specific technical information, please visit vis4d.ncms.org.

In partnership with Ethereal Technologies, NCMS, the largest collaborative research and development consortium in the United States, is forming an industry-led project for

advanced users of visualization tools seeking to drive and capture a lead in the technology.

Additional Information

MRT[®]

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