IMAGING SYSTEM

At right is the DTI 1100C Virtual Window™, an advanced three-dimensional imaging device developed by Dimension Technologies, Inc. (DTI), Rochester, New York. The system won a 1994 R&D 100 Award presented by R&D Magazine, which annually recognizes the 100 most technologically significant new products of the year. The 1100C Virtual Window is based on technology developed under NASA contracts.

The Virtual Window is termed by its developers "a major breakthrough in flat panel display technology, one that gives true 3D imagery without special glasses." Commercial 3D systems are grouped in two broad categories: stereoscopic, in which the user wears glasses or employs an optical device to perceive a 3D image, and autostereoscopic, in which 3D images can be viewed without optical aids. DTI has developed a number of autostereoscopic flat screen displays, which offer advantages in many applications.

The DTI Virtual Window employs an innovative illumination system to deliver the depth and color of true 3D imaging. The system can provide enhanced viewing for critical endoscopic surgery procedures, Magnetic Resonance Imaging scans, or surgical planning. In hazardous area applications, it offers optimal viewing of teleoperated robots for waste removal, reconnaissance, remote inspection and deep hole mining. It can improve the reality of simulators for training, and it has utility in aviation as an in-cockpit display to improve pilot "situation awareness" in all types of aircraft.

DTI is a relatively new company, founded in 1986 to pursue autostereoscopic display technology. In 1993, under Air Force contract, DTI developed a cockpit stereoscopic system for night flying. Introduced in 1993, Virtual Window is a spinoff from technology developed under NASA Small Business Innovation Research (SBIR) grants and other NASA contracts awarded by Ames Research Center, in particular a contract for development of "a large autostereoscopic display for scientific visualization applications."

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