

Total Immersion uses the latest Wireless Tracking Technology from Polhemus for Augmented Reality

Total Immersion is an augmented reality (AR) solutions provider based in France. Committed to become the leader in augmented reality solutions, Total Immersion has invested in people and technology to provide the most powerful AR solution.

Total Immersion has recently chosen LIBERTY™ LATUS™ from Polhemus to advance their AR solutions. LIBERTY LATUS, a totally wireless motion tracking system, integrates easily with Total Immersion's D'FUSION software, which inserts virtual 3D objects into live video images. This solution provides the user with a non-invasive, interactive environment between the user and real time video capture.

Augmented reality is the use of live video imagery which is digitally processed and "augmented" by the addition of interactive 3D graphic objects. This is achieved by overlaying computer generated graphics, sounds and haptics into real world environments.

LIBERTY LATUS is a state of the art, 6 Degree-of-Freedom (6DOF) motion tracking system. The system uses wireless markers to track position and orientation of an object. Each self-contained marker is tracked in space by receptors, each of which provide an 8 foot diameter spherical coverage. The system is capable of accommodating up to 12 markers and up to 16 receptors to create large areas of coverage.

Traditionally, special effects are created offline, frame-by-frame, requiring user interaction and computer graphics system rendering. Now with D'FUSION, the software analyzes the live action images to determine the camera parameters and uses this to drive the generation of the virtual graphic objects to be merged. The user holds a wireless tracking marker to specify where the 3D objects need to appear in real time. The camera follows the movement of the hand and the result is displayed onto the television screen. Because the marker tracks position and orientation of the "virtual" object, which appears to be in the hand of the user, it can be simulated as if it were a real object. The wireless technology is a significant enhancement to Total Immersion's AR solution, enabling the user to have complete freedom of movement without the concern of wires.



Green boxes are virtual images placed by location of markers.

Total Immersion utilizes this advanced technology in various industries and has most recently been chosen by CBS News to enhance its show “48 Hours”. Hosts of the show will use D’FUSION to provide viewers with technical and scientific explanations directly on the set. An automobile manufacturer used this technology in a large corporate



Virtual 3D image of car prototype

presentation where they introduced a prototype of a new car. Since the car only existed in virtual 3D form, this technology was extremely useful in providing a model of the prototype, including color options. Other industries Total Immersion markets its AR solutions include aerospace, theme parks/entertainment, special events, military, and architecture.

Polhemus is the industry leader in 6DOF motion capture, tracking and digitizing technologies. Polhemus provides the absolute best in time proven 3D position and orientation tracking, digitizing, eye tracking and handheld three-dimensional scanning systems. These products already are in wide use in such areas as medical applications, university research, military training and simulation and computer-aided design. For more information on Polhemus, please visit www.polhemus.com.

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