

MirageTrak™
Augmented Reality System



ARCANE 
Technologies

MirageTrak™ Augmented Reality System

Specifications

PC graphics card output display on monitor, TV or multimedia projector

1024 x 768 Machine Vision Grade Cameras can be used at full resolution at 30 FPS in dual 1394a port configuration

AR registration error less than 0.4mm at 1m distance (0.04%)
(with default optical configuration : 41deg field of view)

High camera image resolution offers superior image quality

Stereoscopic rendering support

Wide 122mm baseline for best tracking results

Software vision based AR tracking system

Real-time (30 fps) 6DOF tracking and display

Camera convergence, focal length and focus factory adjustable from 0.5m to infinity depending user needs

Automatic adjustment to lighting conditions (white balance and luminosity)

Robust aluminum enclosure with anodized indigo blue finish

Automatic adjustment to lighting conditions (white balance and luminosity)

1/4" x 20 tapped holes for easy installation to camera tripod and mounting brackets

Overview

The MirageTrak is a complete AR solution giving users the same AR authoring and tracking features than HMD based Mirage Systems. It delivers high quality AR experiences to multiple users simultaneously by allowing PC video output to a monitor, a TV or a multimedia projector. Used with a stereo capable display, it brings mass user AR experiences to a whole new level of realism and awe.

Features

MirageTrak Stereo Camera Enclosure

MirageTrak includes a robust aluminum enclosure fitted with 1/4x20 standard camera tripod mount holes. It features high quality vision-grade cameras and connects to any PC using two standard 1394a ports. The optical configuration is factory chosen and configured following user needs.



MirageAPI™ Application Programming Interface

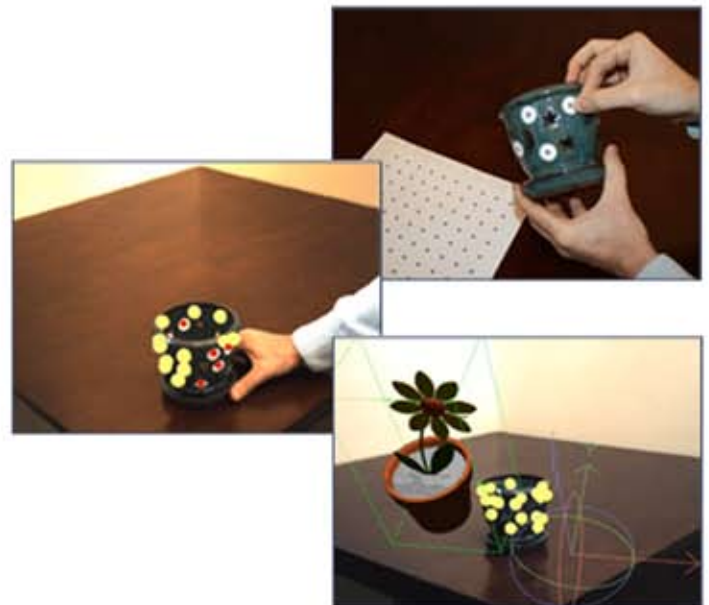
If you are planning to integrate MirageTrak into your own existing application, the MirageAPI allows you access to the AR Engine via a C/C++ DLL. Your application has access to tracking functions and camera data so you can easily merge MirageTrak into your project.

Mirage Builder™ AR Authoring Software

MirageBuilder™ features a high performance vision based positioning system using random fiducial marker patterns on any 3D surface. Vinyl sticker markers are included with every MirageTrak kit and can be applied to any surface. Because the marker patterns do not have shape restrictions, you can even put them on the walls inside a room or over a statue to obtain a full 360 degrees experience. Using no printed 2D flat pattern cards allow the users full flexibility over the way they integrate the virtual content to the real environment.

Only three simple steps are required to create your AR experience :

1. Create a new random marker pattern by applying as many markers as you need over or around the object you wish to augment.
2. Start recording the new marker pattern with the software and explore the scene the same way the user will while wearing the HMD. In this step, the software learns the pattern and stores it for later use.
3. Import 3D models to the recorded marker pattern and align them over the real world as desired.



Using these three simple steps, you can create different AR scenarios in minimal time and concentrate your efforts on your application and not the AR technology itself.

Hardware Requirements

- At least 2.6 GHz PC (Intel Core2 Duo class or better CPU required) with 1 GB RAM
- For stereo rendering (optional) :
 - stereo capable professional graphics adapter (Nvidia Quadro recommended)
 - stereo capable 3D display (3D TV, 3D monitor, stereo projector)
- Microsoft Windows XP (32 bits), Vista and 7, (32 or 64 bits).
- Two available IEEE 1394a firewire ports

