

Mirage™ LR
Augmented Reality System



ARCANE 
Technologies

The Mirage™ Augmented Reality System

Specifications – LR Version

Stereoscopic 800 x 600 SVGA (VGA field sequential input)

640 x 480 Machine Vision Grade Cameras

41 degree diagonal field of view

Software vision based head tracking system

AR registration error less than 1mm at 1m distance (0,1%)

Real-time (30 fps) positioning and display

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

Lightweight : 375g only

User Adjustable Inter Pupillary Distance

Automatic adjustment to lighting conditions (white balance and luminosity)

Real-time skin occlusion feature

Overview

The Mirage Augmented Reality System is a complete solution allowing you to create your own AR experience by inserting virtual contents to the real environment. Mirage runs on a PC computer and includes a stereo video see-through OLED HMD and the required AR software.

Features

Head Mounted Display

The Mirage System includes a lightweight and ergonomic video see-through HMD that was designed to minimize physical and eye fatigue. The optics were chosen to show minimum differences between the real environment and the images taken from the cameras in order to achieve a better realism of merging virtual scenes over the real environment.



MirageAPI™ Application Programming Interface

If you are planning to integrate the Mirage System 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 Mirage into your project.

Mirage Builder™ AR Authoring Software

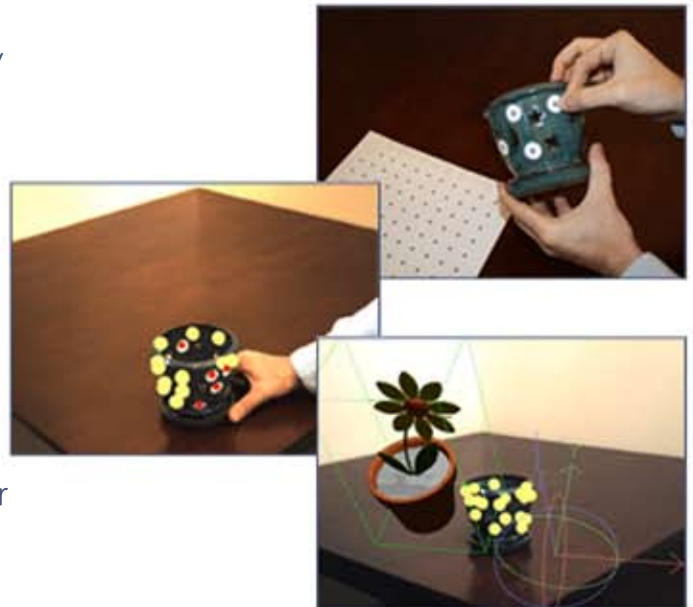
Mirage features a high performance vision based positioning system using random fiducial marker patterns on any 3D surface. Vinyl sticker markers are included with every Mirage System kit and can be applied to any surface. Because the marker patterns do not have shape restrictions, you can even put them on the walls inside a room or over a statue to have 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 2.4 GHz PC computer (dual-core CPU recommended) with 1 GB RAM
- For stereo rendering (optional) :
 - stereo capable professional graphics adapter (Nvidia Quadro recommended)
- Microsoft Windows XP (32 bits), Vista or 7 (32 or 64 bits).
- One available USB port and one available IEEE 1394a firewire port

