



Leonardo

virtual reality managed

INTERACTIVE DESKTOP 3D VR (VIRTUAL REALITY) EQUIPMENT FOR PERSONAL COMPUTERS

Leonar3Do is a 3D interactive tool that not only displays 3D, but also integrates you into your own personal virtual 3D space. With Leonar3Do's revolutionary Bird - the first true 3D mouse available also for home users - you can reach, grab, work and play with objects.

Leonar3Do provides tools that meet the highest professional demands, but are still suitable for those without specific skills or background.

A NEW WORLD BETWEEN THE USER AND THE MONITOR

Leonar3Do is the first complete and complex desktop VR equipment available. The notion of VR (virtual reality) is different from the concept of common 3D displayed as a flat image on the monitor (e.g. in design programs that are controllable only with a mouse), or even from the concept of stereoscopic 3D (movies, television broadcasts). The main and most useful attribute of virtual reality is that you can place an object in a virtual space in front of (or behind) the monitor space. To achieve precise and strikingly realistic visual presentation, the software uses head-tracking: the computer continually fits the displayed images to the current position of your eyes. You can manipulate this VR-image as a real object with the ability to move, modify, color, dismantle or drop it. Almost as you would do this in reality.

COMPONENTS

The main components of Leonar3Do are: a spatial input device (the 'bird') with six degrees of freedom, 3D glasses and monitor-mounted sensors. The bird operates in six degrees of freedom, which means that while you move the individual objects or the whole space, you can also rotate them. The Leonar3Do 3D visualization technology is unique, because, beyond the 3D glasses, which allow users to perceive a stereoscopic image displayed in front of the monitor area as a three-dimensional object, there is also an integrated head-tracking function. The sensors continuously track the position of both the bird and the glasses, and send information through the central unit to the Leonar3Do system software, which continuously calculates the proper visualization angle from the position of the user's eyes.

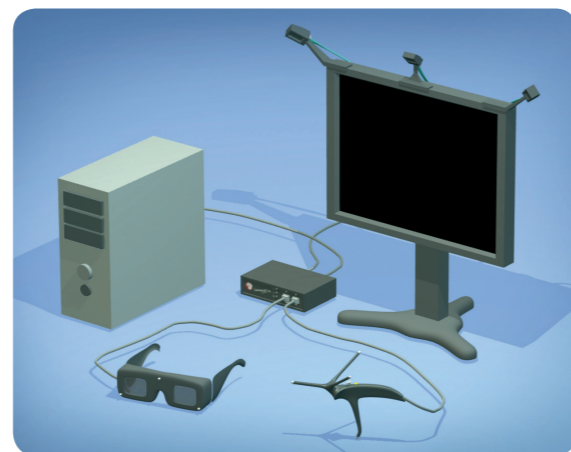
The result: a virtual world created in the space between the user and the monitor, a world you can manipulate using the bird.

Key attributes

- Easy installation
- Affordable price
- Simple, intuitive to use
- User-friendly ergonomics
- Compact size suitable for home use as well as office
- Easy switch between 3D and 2D modes

Kit includes following main items:

- VR glasses
- Bird (3D mouse)
- Sensors
- Leonar3Do software



VIEW AND DESIGN OBJECTS IN 3D OR 2D

Leoworld

LeoWorld is a unique 3D VR modeling and animation software. The user is able to view and shape any form and color in 3D, change the lighting in real time, give physical attributes to virtual objects (changeable mass, gravity, impenetrability, rebounding etc.), create 3D animations, and export them into a video format.

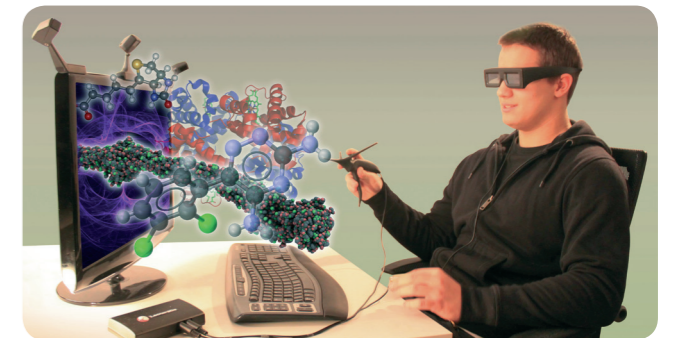
The software itself is highly intuitive, easy and quick to learn and control, and the user can enjoy unlimited freedom in terms of the areas of use and usability.

Realtime polygon optimization - one key capability of LeoWorld. With this new method of 3D geometry editing, the surface is not divided into a specified number of polygons, instead the software always calculates and re-calculates, using as many polygons as are necessary at any moment. Since the geometry of the object is changing automatically, the user doesn't need to have special modeling expertise, and the modeling speed is revolutionary. Since the computer has to work with the number of polygons needed, even real time algorithms (such as physics simulation) can be efficiently applied on the objects.

CAPTURE YOUR WORK - REPRESENTATION IN 2D

LeoCapture

With LeoCapture Leonar3Do solved a major problem of VR authors: representation of 3D work on 2D devices. Using LeoCapture, you can create accurate video clips montaged in real time about the use of Leonar3Do and the results of your work. You are able to pass the same information to the monitor and a camera at the same time, so that the camera "sees" the same virtual object you're working on, in the space in front of the monitor, from its own angle of view. You don't need a costly 3D camera, just a simple USB webcam, or a streaming video camera connected through USB.



DEVELOP YOUR OWN APPLICATIONS - WORK AND PLAY

Leonar3Do SDK

The Leonar3Do Software Development Kit lets you create or adjust any kind of software applications to the Leonar3Do platform. To develop, you only need basic programming and OpenGL skills.

Leonar3Do Software Development Kit (SDK) - Downloadable from the company website.

- API
- Documentation
- Sample source codes

Sample applications

Bundled with Leonar3Do, you receive a graphical tool and two pre-developed games, as kind of samples, showing the capabilities and a prospective development area for the future applications.

LeoBrush

LeoBrush is a unique tool to work on a 2D surface with a tool managed in 3D. The monitor here represents a canvas (2D), in order to use the bird as an air-brush (3D). The user takes advantage of a full graphical editing software: he/she is able to add or remove canvases, rotate and zoom the active canvas with the bird, etc. The capabilities of the brush i.e. the bird functioning

as an airbrush, reveling in the colors and the shapes provide the user with brand new possibilities in designing and painting.

LeoBang and LeoGomoku

LeoBang is a special kind of 3D arcade game that contains more than a dozen levels with different difficulties. EndUser has to control your racket in front of the monitor with the bird to break down walls, barriers and to route the ball into holes and caverns. LeoGomoku is the 3D version of the classic Gomoku (five in a row) game. Very good tool to develop the thinking and designing in 3D. The rule is simple: the winner is the first player to get 5 balls next to each other in any 3D direction.

FEATURES - LEONAR3DO PROFESSIONAL EDITION

Hardware		
Leonar3Do Kit	Bird, Sensors, control unit	✓
Passive 3D monitor Support Pack - standard offer or 120Hz Monitor Support Pack - optional add on	Passive Glasses or Monitor Control Unit, Active Glasses	✓
Software		
LeoWorld	Advanced Modelling, Advanced Lighting, Advanced Sketching and Geometry, Physics Engine, Real Time Polygon Optimization Engine, Presentation, Import and Export	✓
LeoBang	Ball Game	✓
LeoGomoku	Abstract strategy board game	✓
LeoBrush	Create Virtual Paintings	✓
LeoCapture	2D captured video of your work in the Leonar3Do VR environment.	✓
Use		
<i>Business Use and Revenue Generating Activities</i>		✓
<i>Home Use</i>		✓
<i>Educational discount available</i>		✓
SDK		✓

SYSTEM REQUIREMENTS:

- Operating system: Windows XP SP3; Windows Vista, Windows 7 (32 and 64 bit)
- Processor: Intel® Core™ 2 Duo or AMD Athlon™ X2 CPU or larger
- Memory: 4 GB or more
- Video card: NVIDIA 8 series or ATI HD 2400 series or better
- OpenGL 3.0 support
- Hard drive: 500 MByte free hard disk space
- DVD-ROM reader (for the installation)

MONITORS SUPPORTED:

- Passive monitors – as standard offer:
LG Cinema 3D monitors: LG D2342P, LG D2770P-PN, LG DM2350 D-PZ, DM 2780D-PZ (TV) Fujitsu P23T-6 IPSHP 2311gt
Best image quality and contrast – to be watched with any passive circular paperglasses interoperability with the LeoConf system
 - Active monitors – as optional add on:
Samsung 2233RZ, BenQ XL2410T, BenQ XL2420T, ViewSonic VX2268wm or VX2265wm, LG W2363D-PF, Asus VG236, Alienware (Dell) AW2310
- New monitor-types get continuously taken in for testing. Visit www.leonar3do.com for the latest list on supported monitors.

Find out more, and download the latest version of this document at www.leonar3do.com
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