



SpacEyes 3D BUILDER

The real time fly through and 3D model making software





SpacEyes 3D **BUILDER:**

Virtual Reality & Real time 3D Simulation, Earth Observation Imagery & Interactive 3D Modelling

SpacEyes 3D is dedicated to all users who wishes to **communicate, explain, inform** or **present** any type of problematic dealing with management and planning of a territory :

- Visualisation of current or future installations, developments,
- Understanding of natural phenomena,
- or simply **offer** the discovery of a given area.

Using Earth observation images and any cartographic data, **SpacEyes 3D** proposes a whole set of advanced & sophisticated tools for visualisation and 3D model-making.

With its easy & intuitive use, **SpacEyes 3D** applies to non-specialist users. **SpacEyes 3D** comes closer, due to its pedagogical & attractive concept, to traditional office software tools including a « **dynamic & evolving imagery** » component.

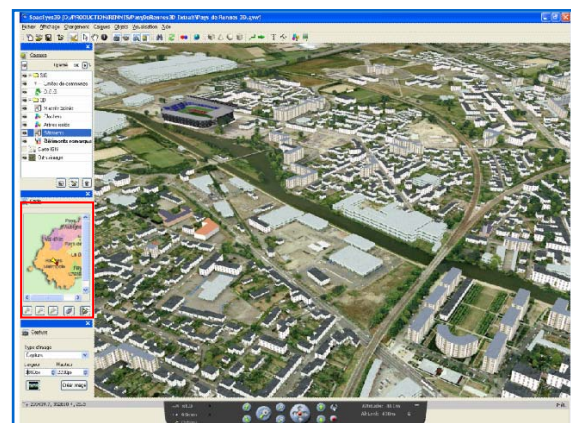


A software Solution Easy to Use, Innovative and Advanced offering a range of specific tools dedicated to:

➡ **Display of GIS data in 3D**

Fly through in real time

For an interactive visualisation software, **the 3D « engine » performance is essential** as, from it, depends the navigation flexibility and the visualisation quality. **SpacEyes 3D** allows to navigate in 3D real-time over large areas with a high level of detail and fluidity. The wish of a large public diffusion of the tool privileges the performance of the developed software functions rather than those of the computer used. That way, **SpacEyes 3D** « flies over » large areas, while keeping a very high resolution close to the ground, thanks to efficient algorithms to process the different levels of ground detail and to display functions allowing to mix several image resolutions.



3D model and its location map

Display of several image resolution

SpacEyes 3D handles **multi-resolution**. It consists in using low resolution images for remote views and background, and more accurate images over areas of interest. The images are issued from any type of source. Low resolution images allow to display large areas without visible limit, while high resolution images contribute to the detail of points of interest. The display of the most accurate image is done progressively when the observer gets closer to the ground.



Progressive appearance of higher resolution images during fly-through

➡ Analysis of the Ground

Merging information

When merging spatial & temporal information, 3D display becomes the perfect tool for analysis and decision-making, and the essential tool for project presentation, retrospectives (natural disasters), and risks prevention.

SpacEyes 3D merges information and offers the possibility to display several ground conditions, and various data source at the same time.

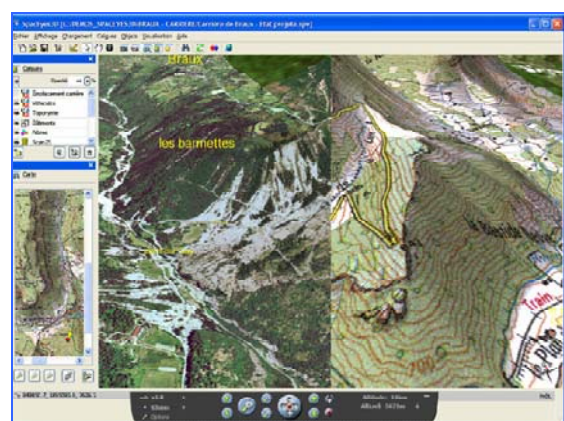


Three different data sources over the same area

Comparing information

SpacEyes 3D displays simultaneously and interactively (dynamic) two sources of information over a same area with its swipe tool: this very visual function allows a fine comparison of data.

As well, **SpacEyes 3D** can « play in real time » on the transparency of the displayed layers and also on the way of “combining” layers, by activating several merging processes.



The swipe tool while allowing fly-through over the area

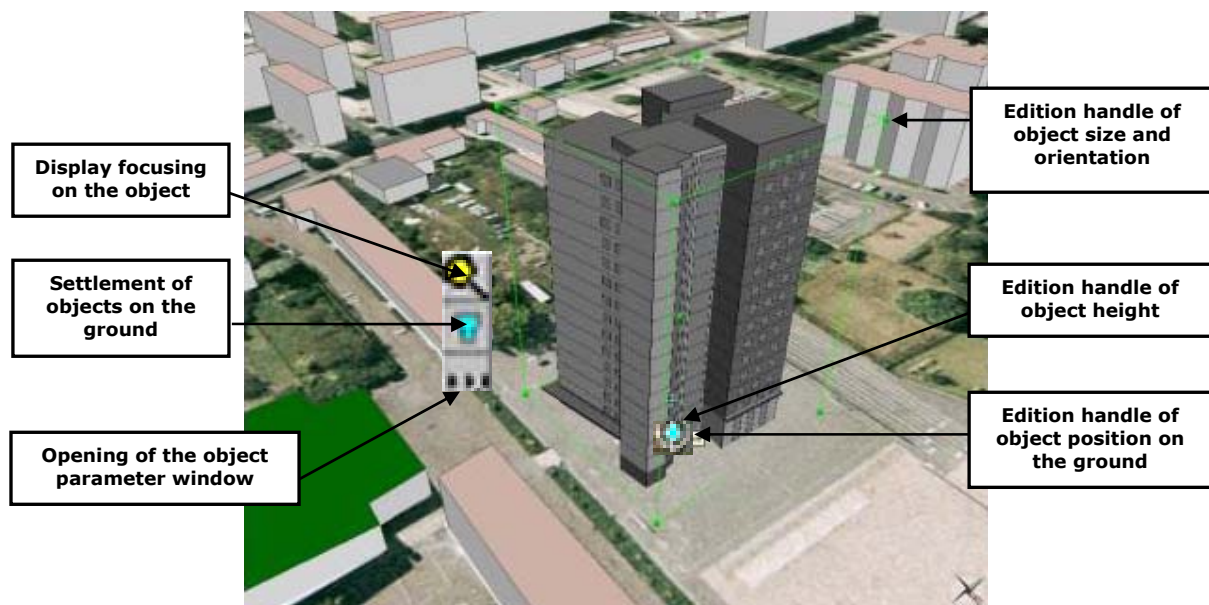
► Analysis of above-ground features: current status & projected status

Displaying buildings and 3D infrastructures

Displaying buildings and 3D infrastructures opens the potentialities of **SpacEyes 3D** on problematic such as land planning with the integration of 3D models of future construction projects (buildings, civil engineering works), installation of electric pylons networks or wind turbine sites, etc.

In the large field of work linked to "3D models" **SpacEyes 3D** position is the following one:

- **3D model-making tool** to add 3D objects and linear features on the ground:



Simplified objects edition window in SpacEyes3D



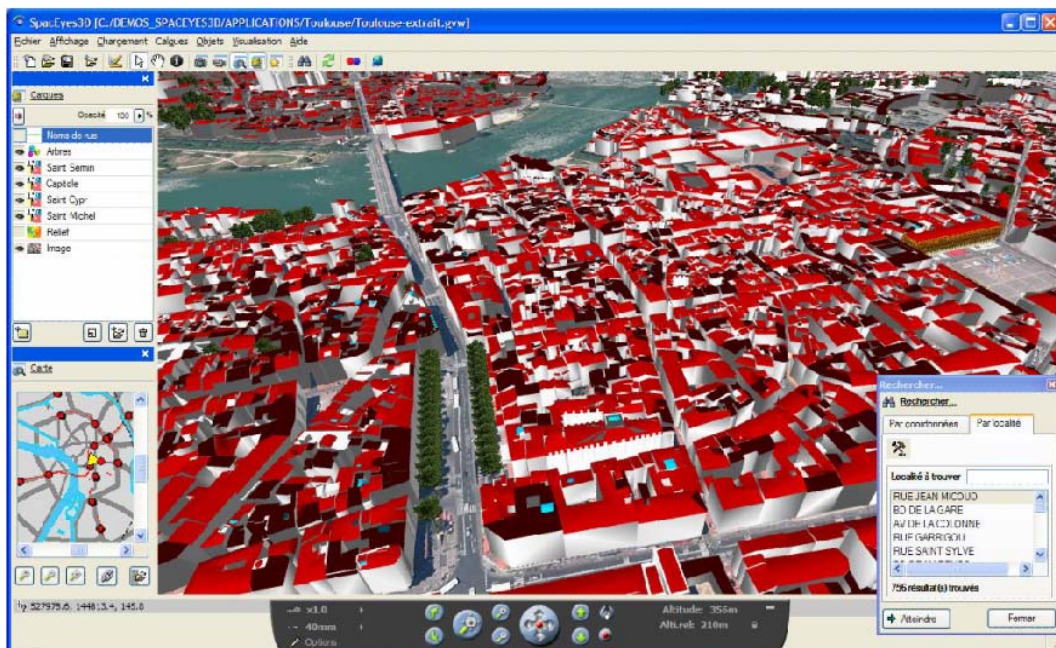
*Ground layout and finishing (linear features, icons, toponymy)
As an example, to display walking itineraries*

- But also as an **integrator** inside its software system, **of complex architectural 3D models** in their real image context,



Visualising Buildings

Building visualisation is one of the first applications wished by the users. **SpacEyes3D** integrates specific algorithms to display thousands of buildings in a fluid and continuous way.





Profit from a Software Solution Open & Integrable

SpacEyes3D opening is a condition for both its autonomous use and its integration in an existing software environment. Moreover, its capacity to be used in various application fields is privileged for, in the end, offering an easy use in the various associated professional activities.

Such a concept is definitively privileged in SpacEyes 3D.

↳ Standard Data Import

SpacEyes 3D directly integrates in their native formats, several types of cartographic data: raster data, vector data, 3D objects. With such a « direct import » concept, **SpacEyes3D** is open towards the main **digital mapping software**, the main **GIS**, and also **computer-aided design** and **3D model making software** as well as associated professions: cartographers, urban & rural planners, land surveyors, architects...

↳ SpacEyes 3D Projects

Communication is one of the main application of **SpacEyes3D**, the software anticipates the different uses, circulations of 3D models: on an **interactive "info point"**, distributed on **CD-ROM**, broadcasted in **images or movies (AVI, TIFF sequences)** and **on Internet** (SpacEyes3D Server).

Interactive Visualisation of the 3D Model

Interactive visualisation is for sure the perfect way to display a 3D model « constructed » with **SpacEyes3D**. A simplified software - **SpacEyes 3D Viewer** – allows 3D interactive visualisation of the model. Moreover, functions dedicated to visualisation improvement are proposed: such as anaglyph display, panoramic viewing 360°...

Image Creation

Images remain the privileged communication support. **SpacEyes3D** easily computes 3D images with full resolution, keeping the complete information of the source data.

Animation Creation

SpacEyes3D computes and registers movies in AVI format.

To create a movie, the user identifies & selects « way points » in the image and for each one chooses specific points of view which are recorded for the animation. This defines the type of trajectory between each point, and the duration of the animation. Then **SpacEyes3D** generates a smoothed trajectory by interpolation and computes all the intermediate views.

Export of added objects and resulting analysis

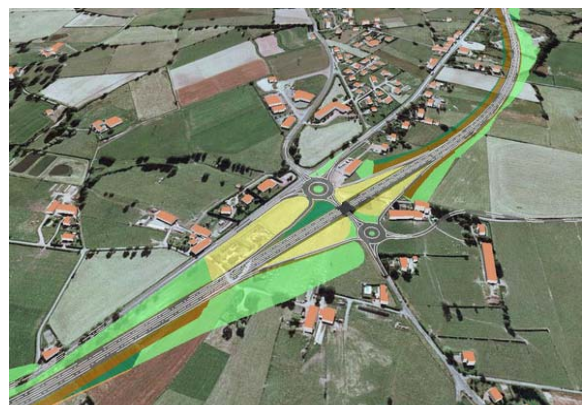
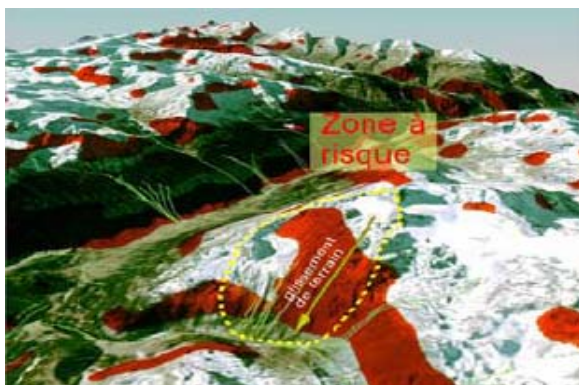
More than a simple visualisation tool, **SpacEyes3D** is both a ground analysis tool and also a digitising tool. In a professional context, the users' interest is to re-use their analysis and their digit done with **SpacEyes3D** from other software, such as GIS.



Examples of application types

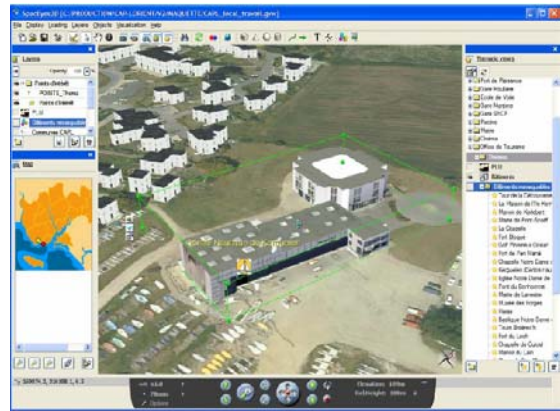
Among the important number of « **professional applications** » of **SpacEyes 3D** solution, we particularly emphasise:

- **Land planning & sustainable development**: Simulation of planning scenarios, visualisation of technical results and decision making support.



- ➡ **Touristic & cultural development:** communication and highlighting of remarkable sites.

- Creation of an “info point” in a tourist information centre to discover a city and its surroundings in 3D, with toponymy inputs and access to web pages (hotels, restaurants, cultural & entertainment centres, monuments),
- Interactive 3D display of a hill-walking itinerary and its various associated information (elevation difference, landscape, fauna & flora interest...),



🔗 **Teaching:** Creation of pedagogical lecture supports in geography and Earth & life sciences.

- A pedagogical demonstration of volcanism by interactive 3D viewing of a crater and its lava flows,
- An interactive geographic atlas presenting real 3D views of cities and countries with an access (hyperlinks) to economic, demographic information...



- Information & media: Illustration of the current events.

- Interactive presentation using real imagery of sport events (stadiums, Olympic Games sites, etc.) with an access to associated data (programmes, transports, etc.)
- 3D views of areas of geopolitics conflicts, meteorological phenomena, natural disasters (flooding, Earth-quakes, forest fires...)

