

Taking a virtual view of the world

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Skimming virtually around 3D scenery is no longer the preserve of experts. New software developed in Europe lets users browse and interact in three dimensions with any part of our planet. Everyone from tourists to land planners stand to benefit.

Terabytes of data daily flow downwards from remote-sensing satellites. Other useful data come from aerial photos and base maps. This information is commonly used for everything from town and country planning to tourism development.

Six partners from France, Italy and Germany spent over three years studying ways of exploiting all this data, for the benefit of society. They came up with a unique program, which uses innovative Virtual Reality techniques to browse very high resolution 3D geographic information.

“Using Vplanet Explorer, anyone can set off on a journey to discover new regions in 3D, rather than staring at a flat map and trying to picture its scenery,” says Eric Martin, coordinator of the IST project Vplanet. “With the click of a mouse, they can fluently fly through terrain in real time, on a standard PC.”

The project’s software merges data from different sources into a single 3D database, using techniques such as filtering, correlation and specially developed 3D algorithms. The partners concentrated their work on surface areas and sub-metric resolution, taking advantage of improvements in pixel resolution in today’s satellite data.

“The challenge is handling large volumes of geographic data on a

standard computer,” says Martin. By working on a PC with a standard graphics cards, it is possible to significantly reduce the cost of working with complex Geographic Information Systems (GIS). He adds: “Our project offers users a transition from GIS to 3D, especially as our software’s open architecture enables interfacing with other software.”

European aircraft-maker Airbus tested the program by linking it to some of its flight simulators. Users were then able fly through simulated real countryside rather than the traditional artificial landscape. Authorities in France recently used Vplanet Explorer to assess flooding risks in the Orleans area by visualising vulnerable land in 3D.

The software was also recently showcased on the inauguration day of France’s Pont Millau. The public presentation of the world’s tallest road bridge combined a digital model of the terrain with data from the Spot 5 satellite and modelling of the bridge itself.

“Local people had resisted the bridge’s construction, claiming it would ruin the scenery,” adds Martin. “Had they seen our presentation earlier, showing the bridge is not a visual disaster, they might have accepted the new edifice without hesitation.”

He agrees that 3D is not vital for such presentations, but believes it adds value. And if the price is right, it will aid groups as varied as land developers and civil protection authorities. He adds that the project’s software is ideal for making 3D models, but it does not actually construct 3D views.

Partners are finalising the project package, which includes separate modules for software installation, training and so on. The complete package will retail for around 10,000 euro and goes on sale this summer.

“France’s national cartographer IGN will soon be making digital map

data available to the public,” notes the coordinator. “To make the most of this data, people will need 3D visualisation software such as Vplanet.”

Source: IST Results

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