



Virtual Showcases: Adding new dimensions to traditional museum displays



A new technology has museum-goers asking, Is it real or is it virtual? Researchers have developed a new Augmented Reality (AR) technology that can replace traditional museum displays and shows promise for other applications.

"This new display technology brings AR technology closer to everyday life," says project Dr Ing Jörg Voskamp from the Fraunhofer Institute for Computer Graphics, leader of the IST project [Virtual Showcases](#). "Before, people had to wear head-mounted displays to augment real objects or environments with additional information. With Virtual Showcases, users can visit augmented objects directly, and

many people can view them at the same time."

The Virtual Showcase is a stereoscopic display system that looks similar to a standard museum showcase. Built from half-silvered mirrors, the sides of the showcase can simultaneously reveal the image of the encased exhibit – for example, the actual skull of a dinosaur – as well as reflect displayed computer graphics, such as 'virtual' skin, eyes or hair.

A Virtual Showcase can be filled with an exclusively virtual exhibit, allowing museums to display artifacts that aren't physically located in the building. The three-year project, which ended in August of this year, was a collaboration of research institutions, industrial companies, and public museums.

In the final phase of the project, three representative demonstrators were built, installed and evaluated in participating museums in Austria, Portugal and Germany. One demonstrator, 'Ancient Roman Tomb', uses stereoscopic video simulation to depict the cremation of a corpse in an ancient incineration ceremony.

"A high percentage of participants in early user-studies said the virtual objects appeared to be three-dimensional," says Dr. Ing. Oliver Bimber, who accompanied the project from its inception and is now with the Bauhaus University in Weimar, Germany, a subcontractor of the project. "Interestingly, a majority responded that they would prefer to visit a Virtual Showcase display rather than a traditional artifact exhibit of the same object."

In addition to science and technology applications, Virtual Showcases could demonstrate products at commercial events and in stores, and provide support material for lectures. Other potential applications include content management of databases, marketing and advertising, and entertainment and "edutainment".

A fourth demonstrator, the VS Kiosk, has been developed for marketing purposes. Using a minimum technical approach and lightweight construction, it marks the lower end of a possible product range for mid-volume markets. Products based on the VS Kiosk will be developed and marketed by Imagination Computer Services GesmbH in Vienna, Austria, one of the industrial members of the consortium.

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