

Virtual museum guide

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Visitors can browse and select the information that interests them most. (© Fraunhofer IGD)

(PhysOrg.com) -- Archaeological treasures are brought to life by Fraunhofer software. Real images are enriched with digital information on a virtual tour through ancient buildings, creating a more vivid experience for the museum visitor.

Every visitor would like to embark on a virtual time journey into the past. Researchers have already set the stage for just such a journey, as exemplified by a recent exhibition in the Allard Pierson Museum in Amsterdam, where visitors could take a stroll through historical sites. A flat screen on a rotating column stood beside the many art works,

showing an extract of the image on the wall - a gigantic black and white photo of the Roman Forum ruins. When the column is rotated to the left, this correspondingly changes what the viewer sees.

A camera connected to the back of the movable display provides information about the new view appearing on the monitor - in this case, the Temple of Saturn ruins. At the same time, a digital animation shows what the temple might have looked like when intact. If the screen is rotated further, it displays information, pictures and videos about other ancient buildings, including the Colosseum.

The sophisticated animation is based on software developed by the Fraunhofer Institute for Computer Graphics Research IGD in Darmstadt. "We have taught the computer to recognize the image," explains Fraunhofer IGD researcher, Michael Zöllner. "The program knows where the center of the camera is pointing and can superimpose the relevant overlay - a text, video or animation." The original image can always be clearly seen under the overlays, so that visitors always know where they are on the virtual tour. This technology is known as [augmented reality](#) to the experts.

The Fraunhofer IGD software in the museum currently runs on a mini-computer, controlled via a [touch screen](#). This handy console clearly indicates a trend towards mobile, virtual guidebooks. When tourists will hold their consoles in front of a baroque prince's palace, the relevant customized information will appear immediately on their screens. Fraunhofer IGD researchers have tested this vision in practice in the "iTACITUS" project, in which Zöllner's team programmed a portable computer to act as an electronic tourist guide for the Royal Palace of Venaria near Turin. New mobile phone technology could accelerate acceptance of augmented reality. "The smart phone means that augmented reality is at last suitable for the mass market," Zöllner says.

Provided by Fraunhofer-Gesellschaft

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