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QuickTime VR, an award-winning software technology of Apple Computers Inc., enables interactive presentations of buildings, outdoor and indoor scenery, museum exhibitions, art galleries, hotel complexes, real estate and more. The concept of QuickTime VR (QTVR) revolves around panoramic images, i.e. photographs covering the complete 360 degrees around the horizon. The human viewer utilizes the computer's monitor like a window and perceives a selected segment of the surrounding panorama. By moving the mouse, this window can be adjusted and the direction of view changed, simulating a movement of the head. This way, the viewer can look left, right, up, down and behind. Much more impressive and convincing than with a conventional photography, the illusion of „actually being there“ is created.

The individual panoramics (nodes) may be linked in order to form an interactively navigable virtual world consisting of adjacent points of view. As an example, a virtual tour of an art gallery can be realized this way. Arbitrary multimedia elements may be embedded into a QTVR application as parts of a panorama. Similar feats are possible using software products of other manufacturers.

Conventional methods for taking panoramic photographs are cumbersome, expensive and unsuitable for large projects involving dozens or hundreds of panoramic images.

One method is to employ special film-based panoramic cameras, which require developing and scanning a complete roll of film per panorama. Checking for quality is not possible while on the scene.

On the other hand, one may use so-called „stitching“ software, which combines a number of individual images taken with a conventional camera from a fixed point of view into a complete panorama covering 360 degrees. The images have to be perspective-corrected and image overlap has to be accounted for. Usually, editing the final image is inevitable. The quality of „stitched“ panoramas is not always optimal.

We have addressed these limitations by developing a sophisticated *digital panoramic camera*. The system enables immediate digital capturing of panoramic images with a resolution of up to 12000 x 2500 pixels, typically in less than a minute. The speed of the camera makes large documentation projects of hundreds and thousands of panoramas feasible.

Our system solution consists of panoramic camera and accompanying notebook computer, which is used for camera control and image storage. The photographer can judge the quality of his work right on the spot, while still on the scene. The process of stitching individual images, hitherto necessary and time-consuming, is completely obviated. There are no additional costs for film, development or scanning services.

We are presenting our camera system at the conference exhibition.

Spheron VR – Bonnet und Steuerwald GbR is a privately held company located in Kaiserslautern, Germany. Our aim is to provide superior solutions and tools to the virtual reality and digital imaging community. Spheron VR has won several awards for its concept, including the prestigious „Gründerwettbewerb Multimedia 1997“ award.