

Virtual Reality applied to Technical Vision

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Abstract

The presented project is from the world of Virtual Reality (VR). It is dealing with a cutting edge approach to Human Computer Interfaces (HCI) in the world of Architecture, Construction and Planning, centring around the user, and it encompasses a rather revolutionary vision system to analyse and control complex technical systems. Using VRML as a modern modelling and programming language for the Web, a ready to use approach will be described.

Introduction

With “responsive workbench”, “stereo goggles”, a “wireless VR-head tracker”, “virtual controls”, and high performance graphics computers; complete immersion in virtually presented worlds with no computer screen display is about to be introduced into practical application. Using such an approach, a Human Operator can “walk around” a virtual presentation of a technical system, view it from all sides in real time, interact with that system using virtual controls, and enjoy a fidelity of interaction previously unknown.

Although these different approaches cannot be directly compared due to the very different technical requirements, both are extremely dependent on their properly designed Human-Machine-Interface. Users’ acceptance and system efficiency depend on the Ergonomists’ work.

Virtual Reality in Architecture, Construction, and Planning

VR in Architecture, Construction, and Planning is part of VR Technical Vision. At Fachhochschule Bochum University of Applied Sciences, a research programme focusing on *VR in Architecture, Construction, and Planning* was established. The objective of this research focus is the development and application of VR methods and procedures in this professional area, thus optimising the HCI for the following tasks: