EDITORIAL

Dr.-Ing. Dirk Balfanz, Dr.-Ing. Jörn Kohlhammer

Welcome to the 6th issue of Computer Graphik topics in 2005. This issue will focus on visualization and some of its prominent sub-domains, specifically mobile information visualization, scientific visualization, and the newest field in this respect: Visual Analytics. The recent advances in data storage, data transmission, and data processing are certainly all vital steps that bring us closer to the promises of the information age. Nevertheless, for now we seem to be firmly stuck in a data age, where more and more data is made available that is overwhelming the users. All the articles in this issue can be seen as small parts of an answer to the worsening problem of information overload, i.e. how to visualize and interact with data in a way that lets humans perceive the information within the data; how to achieve intuitive interaction with information and knowledge to get context-sensitive answers, and how to feed these information needs on various kinds of devices.

The department of Mobile Information Visualization at the Computer Graphics Center - ZGDV has now a decade of experience in cutting edge technologies and solutions for retrieving and utilizing information and knowledge in mobile situations. This issue features two current fields of work in this area: mobile knowledge management and mobile portal technology.

The project MUMMY, funded by the European Commission (EC) and the Federal Office for Education and Science (BBW) in Switzerland, has researched and developed means to improve the efficiency of mobile business processes through mobile, personalized knowledge management. MUMMY approaches the challenges of modern mobile work processes by taking advantage of latest achievements in mobile connectivity, hardware options like camera-equipped handheld devices, and by using multimedia, hypermedia, and semantic web technologies. An important project focus has been the presentation and organization of data and information in mobile work. After 3 years of development and field testing the MUMMY consortium now established an IT system to support mobile business processes. This topics issue features an outline of the system solution developed, highlights the evaluation results of MUMMY in real-work case studies, and points out one specific technology focus: hypervideo.

servingo, an R&D project supported by the German Federal Ministry of Economics and Labour (BMWA), aims at providing a modern, informative, and entertaining »guide« on mobile devices through the FIFA World Cup 2006. The servingo consortium consists of more than 20 participants and sponsors from industry, SMEs, and research institutes. Main pillars of servingo are the concepts of information, orientation, organization, and experience, each provided by target-oriented services assisting the user in different situations, such as mobile multinet routing, hotel and restaurant search and booking, as well as retrieving specific information about a city and events. A set of contributions will present the general idea of the IT-based Service Platform for Infotainment & Logistics, and two specific parts: the mobile diary and interactive 3D reconstruction of game scenes, developed by different departments of ZGDV and Fraunhofer IGD.

In 2004 the department of Realtime Solutions for Simulation and Visual Analytics (formerly: Animation and Image Communication) at IGD started to focus part of their research effort on the emergent topic of »Visual Analytics«. It denotes the interactive processing and visualization of very large, complex, and multidimensional amounts of data and information. Due to an investment by Fraunhofer Gesellschaft, IGD can now utilize a Visual Analytics cluster that can stem the real-time processing demands for visualization on various displays, ranging from mobile devices to very large display walls. The first technologies are based on the traditional expertise in scientific visualization, e.g. in the area of »Progressive Grids«.

One of the most industry-relevant applications of visualization and interaction is virtual prototyping. This issue describes two interesting efforts in this respect. One is our CAD product »Neon Design Studio« for planning neon tube systems in the illuminated advertising industry. The other is the current BMWA project »Virtual Prototyping of Garments«. It presents a technology for garment simulation that is currently adapted and further developed in collaboration with Assyst. This technology is capable of simulating the garment fit around a virtual avatar supported by a »lightweight realistic rendering system«. Tightly coupled with this project is our participation in the EU project »LEAPFROG CA«. It aims at creating a knowledge community in the European textile and clothing industry through the coordination of on-going European and national research projects.

Another EU project, »Uni-Verse« deals with the development of a multi-user open source platform for interactive distributed 3D graphics and 3D sound. Distribution of the data, tools for storing, manipulating, and simulation are developed. Last but not least, »TRAVO« is a project funded by the Heinz-Nixdorf Foundation accelerating our efforts to build technologies for the transfer and visualization of mobile graphical 3D objects with the goal of visualizing complex and dynamic 3D scenes on mobile devices.