

# **Projekt som fått pengar i programmet Visualisering**

## **Geografisk fördelning**

Sundsvall/Mittuniversitetet 1  
Linköping/Norrköping 2  
Stockholm/SU 1  
Stockholm/KTH 2  
Trollhättan/Saab 1  
Uppsala 1

## **Fördelning på ämnesområden**

Medicin 2  
Teknik 3  
Teknik och kultur 1  
Regionplanering 1  
Industri 1

## **Resource Mock-up and Meeting Place (2 milj kr)**

**E Blair Carlsson**

**Saab Automobile AB**

**0730-905 52 54**

The project aims to develop virtual engineering with two complementary aspects for the automotive industry: a technical virtual factory and an educational integrated learning model. The plan consist of collaboration between Chalmers, Volvo Cars & Saab to develop a general model for implementation in both the factory level and station level based upon case studies at Volvo and Saab. In developing a work methodology for capturing, validating, storing and maintaining virtual factory data, the project can demonstrate the processes and skills for manufacturing engineering organizations to be globally competitive under external pressure. Through bringing together experienced engineers and students there is an opportunity to develop a unique integrated teaching model which can be eventually implemented.

## **A Holographic Display Test bed for Visualization of digital 3D (3 milj kr)**

**Mårten Sjöström**

**Mittuniversitetet**

**060-14 88 36**

This project is an interdisciplinary project to create and demonstrate a visualization solution including a 3D display for clinical application. The project has good public health significance. Imaging is a primary diagnostic tool for many diseases and the ability to better appreciate threedimensional information is greatly needed. It also emphasizes that for the future it is not the collection of data which is the great challenge, but the visualization of data.

The present project is a technical challenge in this area of 3D displays. The significant research and innovation in this field is yet needed. In the application the underlying problems in order to achieve this are well identified and possible solutions are outlined. The parametric approach this application takes is a good way to systematically explore the space..

## **ProViz – Interactive visualization of in situ 3D protein images (4 milj kr)**

**Stina Svensson**

**Sveriges lantbruksuniversitet**

**018-471 34 65**

The project "ProViz - Interactive visualization of in situ 3D protein images" aims at developing a unique tool for visualizing nanometer resolution images of macromolecular structures such as proteins. The purpose is to observe the 3D conformation of proteins in cells and give the possibility for the user to see and feel the proteins in context in 3D and thereby obtaining a deeper knowledge of their complex, flexible structure. They will try improving methodologies for the pharmaceutical industry, for scientists working on macromolecular structures, and for educating students in molecular biology. The project is a cooperation between academia and SME companies.

## **LISTEN: Auralization of urban soundscapes (4 milj kr)**

**Mats E Nilsson**

**Stockholms universitet**

**08-612 14 04**

This proposal builds on previous work of the participants in different constellations. The team is now addressing the issue of creating a comprehensive technological system for analysing soundscapes important in urban planning. The main objective is to develop the LISTEN 3D-demonstrator as a tool for simulating (auralizing) these noise-polluted urban soundscapes. With this demonstrator architectural and noise-control solutions for improving urban soundscapes can be auralized already at the planning stage of an urban development, something that may bring immediate cost savings.

Based on extensions of the OS software Uni-Verse three basic scenarios will be developed and investigated. Each scenario will generate a demonstrator in the form of an aural model. A number of relevant partners will contribute advice, experience, and already existing data of various types.

## **Capturing and Visualizing Large Scale Human Action (3 milj kr)**

**Stefan Carlsson**

**Kungliga Tekniska högskolan**

**08-790 84 32**

The proposal aims to integrate the realism of real world action events with the advanced visualization tools used in computer games. The technology to be developed will permit the automatic capture of the 3d-motion of actors in an arena event such as a football game. This will then allow the spectator of the 3d-visualisation of the game to choose any viewing angle, something that may be of considerable interest to both the sports and the entertainment industry. The captured motion information will then be used to enhance the realism of human motion, in e.g computer games, which so far is quite limited. A series of demonstrators will be carried out, in succession.

## **Visual Analytics – Heavy Demonstrator (5 milj kr)**

**Anders Ynnerman**

**Linköpings universitet**

**011-36 33 09**

This proposal suggests creating visualization software for the exploration of high-dimensional data. The plan is to develop a highlevel toolkit that can be used to develop Visual Analytics applications, rather than starting from scratch each time. It brings forward established and robust methodology including statistical analysis and data mining, all with a lean towards geographical information. The targets are selected industrial partners such as within consumer behaviour and market analysis or logistics and shipping.

## **Advancing the State-of-the-Art for Virtual Autopsies (5 milj kr)**

**Anders Persson**

**Linköpings universitet**

**013-22 89 06**

This project aims to take further steps in the technique of virtual autopsies by enhancing the existing methods by addressing the remaining research challenges and to prove that a full envisioned potential of VA is attendable. The practical advantage of virtual autopsy to the public is that it could speed up the investigation of crimes and the solving of crimes. There is a large commercial potential.

The proposal touches a number of visualization research issues, such as multimodal transfer function design and rendering as well intuitive user interfaces for the segmentation of such data. The dissemination plans are clear and the project has a clear clinical impact.

## **ViSuCity – A Visual Sustainable City Planning Tool (3 milj kr)**

**Yifang Ban**

**Kungliga Tekniska högskolan**

**08-790 86 48**

This is a project to develop webbased visualization tools to assist in the multi-disciplinary process of city planning. The idea is that in the past efforts have been disjointed among different types of professionals in the process, but with a visualization tool, information could hopefully be shared among professionals in more efficient and successful way.

./.